

Drinking Water Surveillance Program

METRO TORONTO EASTERLY WATER TREATMENT PLANT

Annual Report 1989



Ontario

Environment
Environnement

**METRO TORONTO (EASTERLY)
WATER TREATMENT PLANT**

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1989

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

METRO TORONTO (EASTERLY) WATER TREATMENT PLANT 1989 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, 65 plants were being monitored.

The Metro Toronto (Easterly) Water Treatment Plant is a direct filtration plant that treats water from Lake Ontario. The process consists of coagulation, flocculation, filtration, disinfection and fluoridation. This plant has a design capacity of 550 x 1000m³/day and in conjunction with the R.C. Harris and R.L. Clark plants, serves a population of approximately 2,333,000 people.

Water samples from the raw, treated and two distribution system sites were taken on a monthly basis and analyzed for approximately 180 parameters. Parameters were divided into the following groups: Bacteriological, Inorganic and Physical (Laboratory Chemistry, Field Chemistry and Metals) and Organic (Chloroaromatics, Chlorophenols, Pesticides and PCB, Phenolics, Polynuclear Aromatic Hydrocarbons, Specific Pesticides and Volatiles). Specific Pesticides and Chlorophenols were analyzed in June and November only.

A summary of results is shown in Table A.

Inorganic and Physical parameters were below any applicable health related ODWOs.

Of a total of approximately 110 Organic parameters tested for on a monthly basis, none exceeded health related guidelines.

During 1989 the DWSP sampling results indicated that the Easterly Water Treatment Plant produced good quality water at the plant and this quality was maintained in the distribution system.

TABLE A

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP)

SUMMARY TABLE BY SCAN

SCAN	RAW			TREATED			SITE 1			SITE 2		
	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE
BACTERIOLOGICAL	35	27	77	36	2	5	33	4	12	30	2	6
CHEMISTRY (FLD)	36	36	100	67	66	98	125	111	88	108	96	88
CHEMISTRY (LAB)	252	199	78	252	194	76	406	360	88	369	330	89
METALS	288	161	55	288	152	52	517	287	55	470	271	57
CHLOROAROMATICS	168	0	0	168	0	0	154	0	0	140	0	0
CHLOROPHENOLS	12	0	0	12	0	0	.	.	.	.	.	.
PAH	191	0	0	191	0	0	.	.	.	.	.	.
PESTICIDES & PCB	408	0	0	408	0	0	309	0	0	288	0	0
PHENOLICS	12	6	50	12	8	66	.	.	.	.	.	.
SPECIFIC PESTICIDES	53	0	0	56	0	0	11	0	0	10	0	0
VOLATILES	348	5	1	348	49	14	319	44	13	261	36	13
TOTAL	1803	434	1838	471	1874	806	1676	735				

NO KNOWN HEALTH RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE

A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

METRO TORONTO (EASTERLY) WATER TREATMENT PLANT 1989 ANNUAL REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, 65 plants were being monitored. The DWSP was initiated at the Metro Toronto (Easterly) Water Treatment Plant in July of 1986. Annual reports were published for 1986 (ISBN 0-7729-2553-4), 1987 and 1988 (ISSN 0840-5166).

This report contains information and results for 1989.

In order to accommodate the increasing number of plants on the DWSP and to facilitate the timely completion of the 1989 annual reports, plants with two or more years of published data will receive an abbreviated annual report. This report maintains the same general format as in previous years but does not include a comprehensive discussion of results. For more detail on the parameters analyzed and discussion of results, consult the 1987 and 1988 reports.

PLANT DESCRIPTION

The Easterly Water Treatment Plant is a direct filtration plant which treats water from Lake Ontario. The process consists of coagulation, flocculation, filtration, disinfection and fluoridation. Superchlorination is used for disinfection and for taste and odour control. Sulphur dioxide is used as a dechlorinator and ammoniation is used to produce a long-lasting chloramine residual in the distribution system. This plant has a rated capacity of $550 \times 1000\text{m}^3/\text{day}$ and daily flows ranging from $192 \times 1000\text{m}^3/\text{day}$ to $518 \times 1000\text{m}^3/\text{day}$. The Easterly Water Treatment Plant in conjunction with the R.C. Harris and R.L. Clark plants (and the Toronto Island plant during the summer months) serves a population of approximately 2,333,000 people.

The plant location is shown in Figure 1. Plant process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

SAMPLING AND ANALYSIS

Plant operating personnel perform analyses on parameters for process control (Table 1).

The Easterly Water Treatment Plant raw and treated water and two sites in the distribution system were sampled for approximately 180 parameters on a monthly basis. The Specific Pesticides and Chlorophenols scans were sampled for in June and November only. Polynuclear Aromatic Hydrocarbons and Phenolics are only analyzed

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

EASTERLY WATER TREATMENT PLANT



Figure 2

METRO TORONTO (EASTERLY) WATER TREATMENT PLANT

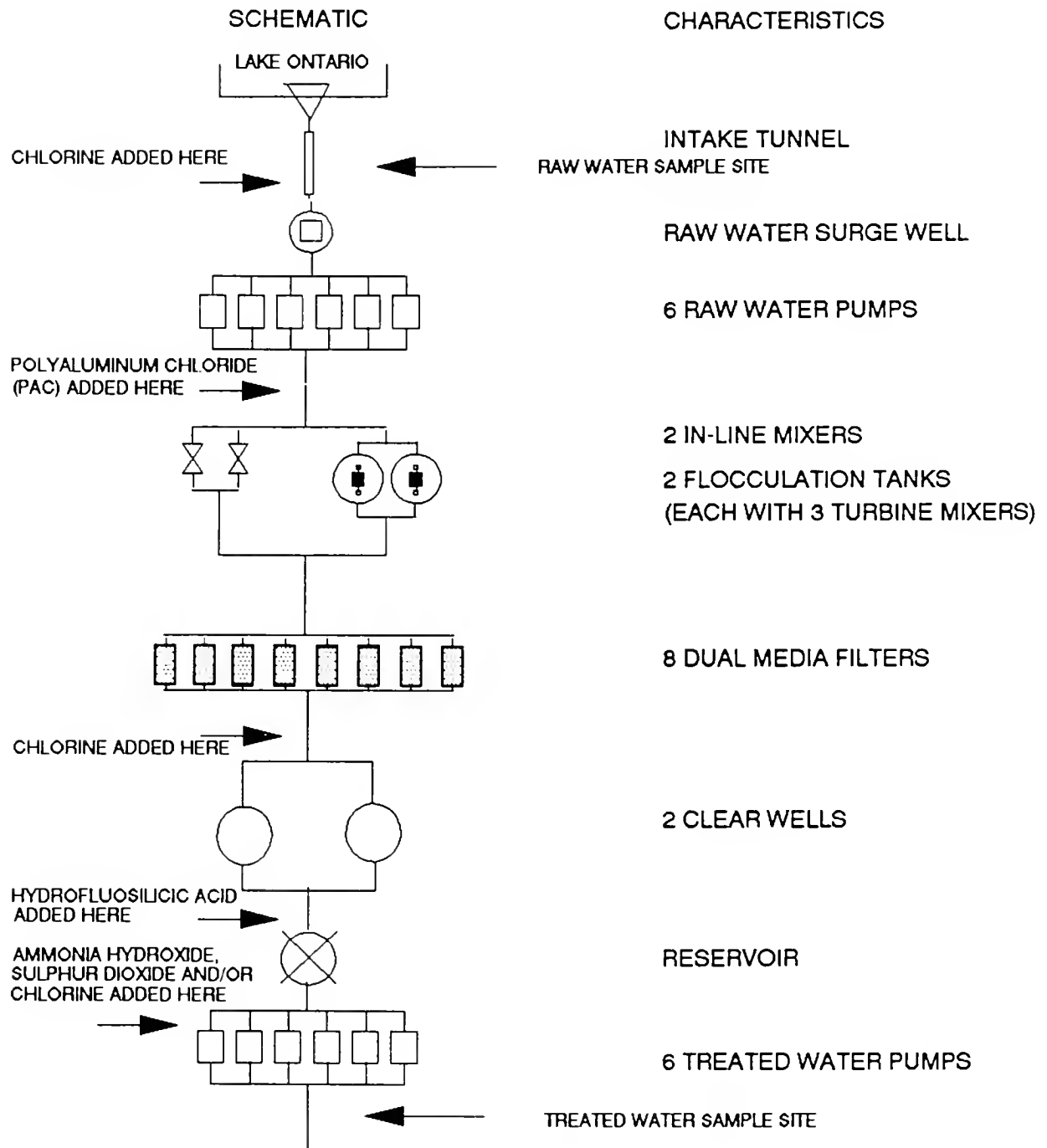


TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORTIN-PLANT MONITORING METRO TORONTO (EASTERLY) WTP 1989

<u>PARAMETER</u>	<u>LOCATION</u>	<u>FREQUENCY</u>
Aluminum	Treated water	daily
Ammonia	Raw water	every 2hrs
	After filters	every 2hrs
	Treated water	every 2hrs
Chlorine residual - free	After clearwell	continuous
	After reservoir	continuous
	After filters	continuous
total	After prechlorination	continuous
	Treated water	continuous
Colour	Raw water	daily
	After filters	daily
	Treated water	daily
pH	Raw water	continuous
		daily
	Treated water	daily
Taste and odour	After filters	hourly
	Treated water	hourly
Temperature	Raw water	continuous
Turbidity	Raw water	continuous
	After filters	continuous
	Treated water	continuous

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORTGENERAL INFORMATIONMETRO TORONTO (EASTERLY) WATER TREATMENT PLANT

LOCATION: 201 COPPERFIELD RD
WEST HILL, ONTARIO
M1E 4S1
(416-392-2574)

SOURCE: RAW WATER SOURCE - LAKE ONTARIO

RATED CAPACITY: 550 (1000 M3/DAY)

OPERATION: MUNICIPAL

PLANT SUPERINTENDENT: W. RIDDOCK

MINISTRY REGION: CENTRAL

DISTRICT OFFICER: D. HOGG

<u>MUNICIPALITY SERVED</u>	<u>POPULATION</u>
CITY OF TORONTO	615,000
CITY OF ETOBICOKE	298,490
CITY OF NORTH YORK	556,308
CITY OF SCARBOROUGH	461,957
CITY OF YORK	133,856
BOROUGH OF EAST YORK	97,679
REGION OF YORK (SOUTH)	170,000

for in the raw and treated water at the plant. As of August the triazine pesticides were only analyzed in the raw and treated water. Laboratory analysis was conducted at the Ministry of the Environment facilities in Rexdale, Ontario.

RESULTS

Field Chemistry measurements were recorded on the day of sampling and were entered onto the DWSP data base as submitted by plant personnel.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analyzed for by parameter and by water type. The number of times that a positive or trace result was detected is also reported.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analyzed in the DWSP.

Associated guidelines and detection limits are also supplied on both tables. Parameters are listed alphabetically within each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters, which are currently under review. When an ODWO is not available guidelines/limits from other agencies are consulted. The Parameter Listing System (PALIS) recently published (ISBN 0-7729-4461-x) by the MOE catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Many of the compounds detected are naturally occurring or are treatment by-products.

IN THIS REPORT, DISCUSSION IS LIMITED TO THE TREATED AND DISTRIBUTED WATER AND ADDRESSES ONLY THOSE PARAMETERS WITH CONCENTRATIONS ABOVE GUIDELINE VALUES AND ORGANICS WITH DETECTED POSITIVE RESULTS.

Results for treated and distributed water indicate that no applicable health related guidelines were exceeded.

Bacteriology

Standard Plate Count

The ODWO for Standard Plate Count of 500 counts/mL (indicating some deterioration) was exceeded, once in the Site 2 water in August.

Inorganic and Physical Parameters

Ammonium

The Total Ammonium levels are high, not as a result of naturally occurring ammonia (eg. from sewage pollution) but from the anhydrous ammonia added in the treatment process. The ammonia is added after post-chlorination to provide a long lasting combined chlorine (chloramine) residual in the distribution system. Substantial free chlorine residuals were present in the treated water in September, October and November. While the European Economic Community has an aesthetic guideline of .05 mg/L, the Maximum Admissible Concentration is .50 mg/L and is set as a result of the concern for potential sewage pollution and its detection.

Aluminum

The plant operational guideline of 100 µg/L as Al in the water leaving the plant was exceeded four times in the treated water.

Organic Parameters

Trihalomethanes

Trihalomethanes (THMs) are acknowledged to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs. All Total THM occurrences, ranging from 13.7 to 25.2 $\mu\text{g/L}$, were well below the ODWO of 350 $\mu\text{g/L}$.

CONCLUSIONS

The Metro Toronto (Easterly) Water Treatment Plant for the sample year of 1989 produced good quality water at the plant as assessed by the results for parameters analyzed in DWSP and this quality was maintained in the distribution system.

Raw and treated water quality for 1986 through to 1989 has remained consistent.

No health related guidelines, for organic or inorganic parameters, were exceeded.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) SAMPLE DAY CONDITIONS 1989

SAMPLE DAY CONDITIONS				TREATMENT CHEMICAL DOSAGES (MG/L)				
DATE	DELAY * TIME (Hrs)	FLOW (1000m ³)	PRE-CHLORINATION Cl ⁻	COAGULATION PAC	POST-CHLORINATION Cl ⁻	FLUORIDATION H ₂ SiF ₆	DECHLORINATION SO ₂	CHLORAMINATION ANHYDROUS NH ₃
JAN 17	6.4	389.0	.80	.68	.95	1.04	.37	.19
FEB 21	6.5	360.0	.80	.74	1.73	1.05	1.87	.21
MAR 21	6.5	.	.80	.69	.71	.95	.24	.20
APR 18	7.5	380.0	.80	.68	1.71	1.04	1.02	.16
MAY 16	.0	.	.80	.67	.82	.98	.25	.16
JUN 20	5.0	501.0	.80	.70	.75	.99	.22	.16
JUL 18	4.8	518.4	.80	.78	1.77	1.02	.92	.17
AUG 22	7.2	343.6	.80	1.17	1.86	1.00	.82	.17
SEP 19	6.4	389.0	.80	1.18	1.77	1.03	1.10	.16
OCT 17	6.4	389.0	.80	.68	.78	1.03	.18	.17
NOV 21	6.6	376.0	.80	.54	.58	.99	.20	.16
DEC 18	13.0	192.0	.80	.57	.66	1.11	.20	.17

* THE DELAY TIME BETWEEN THE RAW AND TREATED WATER SAMPLING, SHOULD ESTIMATE THE RETENTION TIME

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM EASTERLY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW		TREATED		SITE 1		SITE 2	
		TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE
BACTERIOLOGICAL	FECAL COLIFORM MF	11	5	0	.	.	.	.	.
	STANDRD PLATE CNT MF	.	.	12	2	0	11	4	0
	TOTAL COLIFORM MF	12	11	0	12	0	11	0	10
	T COLIFORM BCKGRD MF	12	11	0	12	0	11	0	10
*TOTAL SCAN BACTERIOLOGICAL		35	27	0	36	2	0	33	4
*TOTAL GROUP BACTERIOLOGICAL		35	27	0	36	2	0	33	4

CHEMISTRY (FLD)	FLD CHLORINE (COMB)	.	.	12	12	0	22	22	0
	FLD CHLORINE FREE	.	.	7	6	0	15	1	0
	FLD CHLORINE (TOTAL)	.	.	12	12	0	22	22	0
	FLD PH	12	12	0	12	0	22	22	0
	FLD TEMPERATURE	12	12	0	12	0	22	22	0
FLD TURBIDITY		12	12	0	12	0	22	22	0
*TOTAL SCAN CHEMISTRY (FLD)		36	36	0	67	66	0	125	111

CHEMISTRY (LAB)	ALKALINITY	12	12	0	12	12	0	22	0
	CALCIUM	12	12	0	12	12	0	22	0
	CYANIDE	12	0	0	12	0	11	0	10
	CHLORIDE	12	12	0	12	12	0	22	0
	COLOUR	12	1	11	12	0	12	22	0
CONDUCTIVITY		12	12	0	12	12	0	22	0
*TOTAL SCAN CHEMISTRY (LAB)									

DRINKING WATER SURVEILLANCE PROGRAM EASTERLY

SUMMARY TABLE OF RESULTS (1989)

SITE		RAW		TREATED		SITE 1		SITE 2				
SCAN	PARAMETER	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE			
CHEMISTRY (LAB)	FLUORIDE	12	12	0	12	12	0	22	0	20	0	
	HARDNESS	12	12	0	12	12	0	22	0	20	0	
	IONCAL	12	12	0	12	12	0	22	0	20	0	
	LANGELIERS INDEX	12	12	0	12	12	0	21	0	19	0	
	MAGNESIUM	12	12	0	12	12	0	22	0	20	0	
	SODIUM	12	12	0	12	12	0	22	0	20	0	
	AMMONIUM TOTAL	12	6	1	12	12	0	22	0	20	0	
	NITRITE	12	3	9	12	0	12	11	20	12	8	
	TOTAL NITRATES	12	12	0	12	12	0	22	0	20	0	
	NITROGEN TOT KJELD	12	12	0	12	12	0	22	0	20	0	
	PH	12	12	0	12	12	0	22	0	20	0	
	PHOSPHORUS FIL REACT	12	0	6	12	3	7	.	.	.	.
	PHOSPHORUS TOTAL	12	9	3	12	1	11	.	.	.	.
	SULPHATE	12	12	0	12	12	0	22	0	20	0	
	TURBIDITY	12	12	0	12	10	2	20	2	19	1	
*TOTAL SCAN CHEMISTRY (LAB)		252	199	30	252	194	44	406	360	369	330	29

METALS	SILVER	12	0	3	12	0	2	22	0	7	0	4
	ALUMINUM	12	12	0	12	12	0	22	22	0	20	0
	ARSENIC	12	9	3	12	11	1	22	18	4	20	6
	BARIUM	12	12	0	12	12	0	22	22	0	20	0
	BORON	12	12	0	12	12	0	22	22	0	20	0
BERYLLIUM	12	0	8	12	0	7	22	0	10	20	10	

TABLE 4

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SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE		RAW		TREATED		SITE 1		SITE 2			
		TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE		
METALS	CADMIUM	12	0	2	12	0	3	22	0	7	20	0	6
	COBALT	12	0	12	12	0	11	22	0	22	20	0	18
	CHROMIUM	12	9	3	12	9	2	22	16	4	20	12	6
	COPPER	12	12	0	12	12	0	22	22	0	20	19	1
	IRON	12	0	10	12	0	6	22	0	13	20	3	17
	MERCURY	12	1	3	12	0	5	11	0	3	10	0	4
	MANGANESE	12	12	0	12	2	10	22	6	16	20	20	0
	MOLYBDENUM	12	12	0	12	12	0	22	22	0	20	20	0
	NICKEL	12	3	9	12	2	10	22	11	11	20	10	10
	LEAD	12	10	2	12	12	0	22	22	0	20	19	1
	ANTIMONY	12	11	1	12	11	1	22	21	1	20	19	1
	SELENIUM	12	0	4	12	0	8	22	0	18	20	0	14
	STRONTIUM	12	12	0	12	12	0	22	22	0	20	20	0
	TITANIUM	12	11	1	12	11	1	22	19	3	20	18	2
CHLOROAROMATICS	THALLIUM	12	0	2	12	0	4	22	0	7	20	0	7
	URANIUM	12	11	1	12	11	1	22	20	2	20	18	2
	VANADIUM	12	0	12	12	0	12	22	0	22	20	0	20
	ZINC	12	12	0	12	11	1	22	22	0	20	19	1
	*TOTAL SCAN METALS		288	161	76	288	152	85	517	287	150	470	271	130
*TOTAL GROUP INORGANIC & PHYSICAL		576	396	106	607	412	129	1048	758	185	947	697	159

CHLOROAROMATICS		12	0	0	12	0	0	11	0	0	10	0	0
123 TRICHLOROBENZENE		12	0	0	12	0	0	11	0	0	10	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM EASTERLY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE		RAW		TREATED		SITE 1		SITE 2	
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL
CHLOROAROMATICS	1234 T-CHLOROBENZENE	12	0	0	12	0	0	11	0	0	10
	1235 T-CHLOROBENZENE	12	0	0	12	0	0	11	0	0	10
	124 TRICHLOROBENZENE	12	0	0	12	0	0	11	0	0	10
	1245 T-CHLOROBENZENE	12	0	0	12	0	0	11	0	0	10
	135 TRICHLOROBENZENE	12	0	0	12	0	0	11	0	0	10
	HCB	12	0	0	12	0	0	11	0	0	10
	HEXACHLOROETHANE	12	0	0	12	0	0	11	0	0	10
	OCTACHLOROSTYRENE	12	0	0	12	0	0	11	0	0	10
	PENTACHLOROBENZENE	12	0	0	12	0	0	11	0	0	10
	236 TRICHLOROTOLUENE	12	0	0	12	0	0	11	0	0	10
*TOTAL SCAN CHLOROAROMATICS	245 TRICHLOROTOLUENE	12	0	0	12	0	0	11	0	0	10
	26A TRICHLOROTOLUENE	12	0	0	12	0	0	11	0	0	10
		168	0	0	168	0	0	154	0	0	140
CHLOROPHENOLS	234 TRICHLOROPHENOL	2	0	0	2	0	0	-	-	-	-
	2345 T-CHLOROPHENOL	2	0	0	2	0	0	-	-	-	-
	2356 T-CHLOROPHENOL	2	0	0	2	0	0	-	-	-	-
	245-TRICHLOROPHENOL	2	0	0	2	0	0	-	-	-	-
	246-TRICHLOROPHENOL	2	0	0	2	0	0	-	-	-	-
	PENTACHLOROPHENOL	2	0	0	2	0	0	-	-	-	-
*TOTAL SCAN CHLOROPHENOLS		12	0	0	12	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM EASTERLY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE		RAW		TREATED		SITE 1		SITE 2	
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL
PAH	PHENANTHRENE	12	0	0	12	0	0	.	.	.	.
	ANTHRACENE	12	0	0	12	0	0	.	.	.	.
	FLUORANTHENE	12	0	0	12	0	0	.	.	.	.
	PYRENE	12	0	0	12	0	0	.	.	.	.
	BENZO(A)ANTHRACENE	12	0	0	12	0	0	.	.	.	.
	CHRYSENE	12	0	0	12	0	0	.	.	.	.
	DIMETH. BENZ(A)ANTHR	4	0	0	4	0	0	.	.	.	.
	BENZO(E) PYRENE	12	0	0	12	0	0	.	.	.	.
	BENZO(B) FLUORANTHEN	12	0	0	12	0	0	.	.	.	.
	PERYLENE	12	0	0	12	0	0	.	.	.	.
	BENZO(K) FLUORANTHEN	12	0	0	12	0	0	.	.	.	.
	BENZO(A) PYRENE	7	0	0	7	0	0	.	.	.	.
	BENZO(G,H,I) PERYLEN	12	0	0	12	0	0	.	.	.	.
	DIBENZO(A,H) ANTHRAC	12	0	0	12	0	0	.	.	.	.
	INDENO(1,2,3-C,D) PY	12	0	0	12	0	0	.	.	.	.
	BENZO(B) CHRYSENE	12	0	0	12	0	0	.	.	.	.
	CORONENE	12	0	0	12	0	0	.	.	.	.
*TOTAL SCAN PAH		191	0	0	191	0	0	0	0	0	0
PESTICIDES & PCB	ALDRIN	12	0	0	12	0	0	11	0	0	10
	ALPHA BHC	12	0	7	12	0	10	11	0	5	10
	BETA BHC	12	0	0	12	0	0	11	0	0	10
	LINDANE	12	0	0	12	0	0	11	0	0	10

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM EASTERLY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE		RAW		TREATED		SITE 1		SITE 2	
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL
	PESTICIDES & PCB	12	0	0	12	0	0	11	0	0	10
	ALPHA CHLORDANE	12	0	0	12	0	0	11	0	0	10
	GAMMA CHLORDANE	12	0	0	12	0	0	11	0	0	10
	DIELDRIN	12	0	0	12	0	0	11	0	0	10
	METHOXYCHLOR	12	0	0	12	0	0	11	0	0	10
	ENDOSULFAN 1	12	0	0	12	0	0	11	0	0	10
	ENDOSULFAN II	12	0	0	12	0	0	11	0	0	10
	ENDRIN	12	0	0	12	0	0	11	0	0	10
	ENDOSULFAN SULPHATE	12	0	0	12	0	0	11	0	0	10
	HEPTACHLOR EPOXIDE	12	0	0	12	0	0	11	0	0	10
	HEPTACHLOR	12	0	0	12	0	0	11	0	0	10
	MIREX	12	0	0	12	0	0	11	0	0	10
	OXYCHLORDANE	12	0	0	12	0	0	11	0	0	10
	OPDDT	12	0	0	12	0	0	11	0	0	10
	PCB	12	0	0	12	0	0	11	0	0	10
	DDD	12	0	0	12	0	0	11	0	0	10
	PPDDE	12	0	0	12	0	0	11	0	0	10
	PPDDT	12	0	0	12	0	0	11	0	0	10
	AMETRINE	12	0	0	12	0	0	6	0	0	6
	ATRAZINE	12	0	0	12	0	0	6	0	0	6
	ATRATONE	12	0	0	12	0	0	6	0	0	6
	CYANAZINE (BLADEX)	12	0	0	12	0	0	6	0	0	6
	D-ETHYL ATRAZINE	12	0	0	12	0	0	6	0	0	6
	D-ETHYL SIMAZINE	12	0	0	12	0	0	6	0	0	6
	PROMETONE	12	0	0	12	0	0	6	0	0	6
	PROPACINE	12	0	0	12	0	0	6	0	0	6

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM EASTERLY

SUMMARY TABLE OF RESULTS (1989)

SITE		RAW		TREATED		SITE 1		SITE 2	
SCAN	PARAMETER	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE

PESTICIDES & PCB	PROMETRYNE	12	0	0	12	0	0	6	0
	METRIBUZIN (SENCOR)	12	0	0	12	0	0	6	0
	SIMAZINE	12	0	0	12	0	0	6	0
	ALACHLOR (LASSO)	12	0	0	12	0	0	6	0
	METOLACHLOR	12	0	0	12	0	0	6	0
*TOTAL SCAN PESTICIDES & PCB		408	0	7	408	0	10	309	5

PHENOLICS	PHENOLICS	12	6	5	12	8	4	.	.

*TOTAL SCAN PHENOLICS		12	6	5	12	8	4	0	0

SPECIFIC PESTICIDES	TOXAPHENE	12	0	0	12	0	0	11	0
	2,4,5-T	2	0	0	2	0	0	.	.
	2,4-D	2	0	0	2	0	0	.	.
	2,4-DB	2	0	0	2	0	0	.	.
	2,4 D PROPIONIC ACID	2	0	0	2	0	0	.	.
	DICAMBA	2	0	0	2	0	0	.	.
	PICHLORAM	0	0	0	0	0	0	.	.
	SILVEX	2	0	0	2	0	0	.	.
	DIAZINON	1	0	0	2	0	0	.	.
	DICHLOROVOS	1	0	0	2	0	0	.	.
CHLORPYRIFOS	1	0	0	2	0	0	.	.	

DRINKING WATER SURVEILLANCE PROGRAM EASTERLY

SCAN	PARAMETER	SITE		RAW		TREATED		SITE 1		SITE 2	
		TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE	TOTAL	POSITIVE TRACE
SPECIFIC PESTICIDES	ETHION	1	0	0	2	0	0	0	0	0	0
	AZINPHOS-METHYL	0	0	0	0	0	0	0	0	0	0
	MALATHION	1	0	0	2	0	0	0	0	0	0
	MEVINPHOS	1	0	0	2	0	0	0	0	0	0
	METHYL PARATHION	1	0	0	2	0	0	0	0	0	0
	METHYLTRITHION	1	0	0	2	0	0	0	0	0	0
	PARATHION	1	0	0	2	0	0	0	0	0	0
	PHORATE	1	0	0	2	0	0	0	0	0	0
	RELDAN	1	0	0	2	0	0	0	0	0	0
	RONNEL	1	0	0	2	0	0	0	0	0	0
	AMINOCARB	0	0	0	0	0	0	0	0	0	0
	BENONYL	1	0	0	0	0	0	0	0	0	0
	BUX	0	0	0	0	0	0	0	0	0	0
	CARBOFURAN	2	0	0	1	0	0	0	0	0	0
	CICP	2	0	0	1	0	0	0	0	0	0
	DIALLATE	2	0	0	1	0	0	0	0	0	0
	EPTAM	2	0	0	1	0	0	0	0	0	0
	IPC	2	0	0	1	0	0	0	0	0	0
	PROPOKUR	2	0	0	1	0	0	0	0	0	0
	CARBARYL	2	0	0	1	0	0	0	0	0	0
BUTYLATE	2	0	0	1	0	0	0	0	0	0	
*TOTAL SCAN SPECIFIC PESTICIDES		53	0	0	56	0	0	11	0	10	0

VOLATILES	BENZENE	12	0	0	12	0	0	11	0	9	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM EASTERLY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE			RAW			TREATED			SITE 1			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	TOLUENE	12	0	2	12	0	6	11	0	2	9	0	1			
	ETHYLBENZENE	12	0	5	12	0	5	11	0	4	9	0	1			
	P-XYLENE	12	0	0	12	0	0	11	0	0	9	0	0			
	M-XYLENE	12	0	1	12	0	2	11	0	0	9	0	0			
	O-XYLENE	12	0	1	12	0	1	11	0	1	9	0	0			
	STYRENE	12	1	6	12	1	9	11	0	8	9	0	6			
	1,1 DICHLOROETHYLENE	12	0	0	12	0	0	11	0	0	9	0	0			
	METHYLENE CHLORIDE	12	0	0	12	0	0	11	0	0	9	0	0			
	1,1,2DICHLOROETHYLENE	12	0	0	12	0	0	11	0	0	9	0	0			
	1,1 DICHLOROETHANE	12	0	0	12	0	0	11	0	0	9	0	0			
	CHLOROFORM	12	1	4	12	12	0	11	11	0	9	9	0			
	111, TRICHLOROETHANE	12	0	2	12	0	1	11	0	3	9	0	0			
	1,2 DICHLOROETHANE	12	0	0	12	0	0	11	0	0	9	0	0			
	CARBON TETRACHLORIDE	12	0	0	12	0	2	11	0	2	9	0	1			
	1,2 DICHLOROPROPANE	12	0	0	12	0	0	11	0	0	9	0	0			
	TRICHLOROETHYLENE	12	0	0	12	0	0	11	0	0	9	0	0			
	DICHLOROBROMOMETHANE	12	1	3	12	12	0	11	11	0	9	9	0			
	112 TRICHLOROETHANE	12	0	0	12	0	0	11	0	0	9	0	0			
	CHLORODIBROMOMETHANE	12	1	0	12	12	0	11	11	0	9	9	0			
	T-CHLOROETHYLENE	12	0	0	12	0	1	11	0	1	9	0	0			
BROMOFORM	12	0	1	12	0	12	11	0	11	9	0	9				
1122 T-CHLOROETHANE	12	0	0	12	0	0	11	0	0	9	0	0				
CHLOROBENZENE	12	0	0	12	0	0	11	0	0	9	0	0				
1,4 DICHLOROBENZENE	12	0	0	12	0	0	11	0	0	9	0	0				
1,3 DICHLOROBENZENE	12	0	0	12	0	0	11	0	1	9	0	0				

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM EASTERLY

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE		TREATED		SITE 1		SITE 2	
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE
VOLATILES	1,2 DICHLOROBENZENE	12	0	0	12	0	0	9	0
	ETHYLENE DIBROMIDE	12	0	0	12	0	0	9	0
	TOTL TRIHALOMETHANES	12	1	0	12	12	0	9	9

*TOTAL SCAN VOLATILES		348	5	25	348	49	39	319	44
*TOTAL GROUP ORGANIC		1192	11	37	1195	57	53	793	44

TOTAL		1803	434	143	1838	471	182	1874	806
								1676	735
									183

KEY TO TABLE 5 and 6

- A ONTARIO DRINKING WATER OBJECTIVES (ODWO)
1. Maximum Acceptable Concentration (MAC)
 - 1+. MAC for Total Trihalomethanes
 - 1*. MAC for Bacteriological Analyses
- Poor water quality is indicated when :
- total coliform counts > 0 < 5
 - P/A Bottle Test is present after 48 hours
 - Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
 - Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
 - Standard Plate Count should not exceed 500 organisms per ml at 35 °C within 48 hours
2. Interim Maximum Acceptable Concentration (IMAC)
 3. Maximum Desirable Concentration (MDC)
 4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.
- B HEALTH & WELFARE CANADA (H&W)
1. Maximum Acceptable Concentration (MAC)
 2. Proposed MAC
 3. Interim MAC
 4. Aesthetic Objective (AO) (for xylenes, a total)
- C WORLD HEALTH ORGANIZATION (WHO)
1. Guideline Value (GV)
 2. Tentative GV
 3. Aesthetic GV
- D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. Maximum Contaminant Level (MCL)
 2. Suggested No-Adverse Effect Level (SNAEL)
 3. Lifetime Health Advisory
 4. EPA Ambient Water Quality Criteria
 5. Maximum Contaminant Level Goal (MCLG)
- F EUROPEAN ECONOMIC COMMUNITY (EEC)
1. Health Related Guideline Level
 2. Aesthetic Guideline Level
 3. Maximum Admissable Concentration (MADC)
- G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE
- H USSR MAXIMUM PERMISSIBLE CONCENTRATION
- I NEW YORK STATE AMBIENT WATER GUIDELINE
- N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:

1. Exclude the low-level data because of this uncertainty factor. However, studies of long-term environmental trends and modelling may be adversely affected by exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported qualified by the code "<T". Results quantified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. However the average of such data is still only an estimate of the amount of substance present subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!AW	No Data: Analysis Withdrawn
!CR	No Data: Could Not Confirm By Reanalysis
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IP	No Data: Insufficient Preservative
!IS	No Data: Insufficient Sample

!LA	No Data: Laboratory Accident
!LD	No Data: Test Queued After Sample Discarded
!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!QU	No Data: Quality Control Unacceptable
!PE	No Data: Procedural Error - Sample Discarded
!PH	No Data: Sample pH Outside Valid Range
!RE	No Data: Received Empty
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only
PPS	Test Performed On Preserved Sample
RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours
T# (T06)	Result Taken After # Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW

TREATED

SITE 1

SITE 2

STANDING

FREE FLOW

STANDING

FREE FLOW

BACTERIOLOGICAL

FECAL COLIFORM MF (CT/100ML)

DET'N LIMIT = 0

GUIDELINE = 0 (A1)

JAN	1 T24	.	.	.	.	.
FEB	0 T48	.	.	.	.	.
MAR	0 T48	.	.	.	.	.
APR	!LA	.	.	.	.	.
MAY	0	.	.	.	.	.
JUN	BDL	.	.	.	.	.
JUL	1	.	.	.	.	.
AUG	2	.	.	.	.	.
SEP	0	.	.	.	.	.
OCT	0	.	.	.	.	.
NOV	8	.	.	.	.	.
DEC	4	.	.	.	.	.

STANDRD PLATE CNT MF ()

DET'N LIMIT =

GUIDELINE =

JAN	.	0 <=>	.	0 <=>	.	0 <=>
FEB	.	0 <=>	.	0 <=>	.	0 <=>
MAR	.	0 <=>	.	.	.	0 <=>
APR	.	1 <=>	.	1 <=>	.	.
MAY	.	1 <=>	.	3 <=>	.	1 <=>
JUN	.	0 <=>	.	1	.	0 <=>
JUL	.	1 <=>	.	3 <=>	.	2 <=>
AUG	.	1 <=>	.	640	.	.
SEP	.	2 <=>	.	7 <=>	.	38
OCT	.	1 <=>	.	7 <=>	.	0 <=>
NOV	.	15	.	23	.	9 <=>
DEC	.	11	.	17	.	7 <=>

TOTAL COLIFORM MF (CT/100ML)

DET'N LIMIT = 0

GUIDELINE = 5/100ML(A1)

JAN	28 T24	0 T24	.	0 T06	.	0 T06
FEB	4 T48	0 T48	.	0 T24	.	0 T24
MAR	77 A3C	0 T48	.	.	.	0 T24
APR	2 A3C	0 T48	.	0 T24	.	.
MAY	6 A3C	0	.	0	.	0
JUN	5 A3C	0	.	0	.	0
JUL	52 A3C	0	.	0	.	1
AUG	55 A3C	0	.	0	.	.
SEP	102 A3C	0	.	0	.	0
OCT	60	0	.	0	.	0
NOV	52	0	.	0	.	0
DEC	20 <=>	0	.	0	.	0

T COLIFORM BCKGRD MF (CT/100ML)

DET'N LIMIT = 0

GUIDELINE = N/A

JAN	104 T24	0 T24	.	0 T06	.	0 T06
FEB	6 T48	0 T48	.	0 T24	.	0 T24
MAR	2400 >	0 T48	.	.	.	0 T24

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
APR	760 A3C	0 T48	.	0 T24	.	.
MAY	500 A3C	0	.	0	.	0
JUN	590 A3C	0	.	0	.	0
JUL	1080	0	.	0	.	0
AUG	2400 >	0	.	0	.	.
SEP	4800 >	0	.	0	.	0
OCT	1000	0	.	0	.	0
NOV	336	0	.	0	.	0
DEC	20 <=>	0	.	0	.	0

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW

TREATED

SITE 1

SITE 2

STANDING

FREE FLOW

STANDING

FREE FLOW

CHEMISTRY (FLD)

FLD CHLORINE (COMB) ()

DET'N LIMIT =

GUIDELINE =

JAN	.	.680	.400	.800	.800	.850
FEB	.	.750	.200	.800	.700	.800
MAR	.	.750	.	.	.600	.750
APR	.	.550	.200	.750	.	.
MAY	.	.700	.200	.550	.600	.650
JUN	.	.700	.200	.600	.400	.600
JUL	.	.550	.100	.450	.600	.700
AUG	.	.700	.100	.400	.	.
SEP	.	.350	.100	.400	.	.
OCT	.	.350	.300	.500	.400	.550
NOV	.	.350	.200	.550	.500	.600
DEC	.	.700	.200	.600	.450	.600

FLD CHLORINE FREE ()

DET'N LIMIT =

GUIDELINE =

JAN	.	.070	.	.	.	.
APR	.	.100	.	.	.	.
MAY	.	.	.	.050	.	.
JUN	.	.	.000	.000	.000	.000
JUL	.	.050	.000	.000	.000	.000
AUG	.	.000	.000	.000	.	.
SEP	.	.350	.000	.000	.000	.000
OCT	.	.350	.000	.000	.000	.000
NOV	.	.400	.000	.000	.000	.000
DEC	.	.	.000	.000	.000	.000

FLD CHLORINE (TOTAL) ()

DET'N LIMIT =

GUIDELINE =

JAN	.	.750	.400	.800	.800	.850
FEB	.	.750	.200	.800	.700	.800
MAR	.	.750	.	.	.600	.750
APR	.	.650	.200	.750	.	.
MAY	.	.700	.200	.600	.600	.650
JUN	.	.700	.200	.600	.400	.600
JUL	.	.600	.100	.450	.600	.700
AUG	.	.700	.100	.400	.	.
SEP	.	.700	.100	.400	.	.
OCT	.	.700	.300	.500	.400	.550
NOV	.	.750	.200	.550	.500	.600
DEC	.	.700	.200	.600	.450	.600

FLD PH (DMNSLESS)

DET'N LIMIT = N/A

GUIDELINE = 6.5-8.5(A4)

JAN	8.000	7.490	7.600	7.600	7.610	7.610
FEB	8.060	7.400	7.430	7.410	7.400	7.410
MAR	8.130	7.510	.	.	7.570	7.550
APR	8.230	7.570	7.700	7.620	.	.
MAY	8.250	7.550	7.750	7.710	7.720	7.640

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
<hr/>						
JUN	8.110	7.670	7.580	7.640	7.670	7.730
JUL	8.200	7.550	7.720	7.670	7.630	7.550
AUG	8.130	7.440	7.670	7.630	.	.
SEP	8.370	7.600	7.550	7.600	7.560	7.540
OCT	8.220	7.580	7.670	7.670	7.660	7.670
NOV	8.130	7.460	7.790	7.740	7.940	7.780
DEC	8.020	7.300	7.800	7.730	7.880	7.780
<hr/>						
FLD TEMPERATURE (DEG.C)			DET'N LIMIT = N/A		GUIDELINE = 15 (A1)	
JAN	3.000	3.000	19.000	6.000	11.000	6.000
FEB	2.800	3.000	20.000	6.000	10.000	6.000
MAR	1.900	2.000	.	.	10.000	4.000
APR	4.000	4.000	19.000	7.000	.	.
MAY	6.000	6.000	19.000	9.000	11.000	7.500
JUN	6.000	6.000	20.000	13.000	15.500	11.000
JUL	7.000	7.500	21.000	12.000	13.000	12.000
AUG	17.000	17.000	22.000	19.000	.	.
SEP	19.000	19.000	22.000	19.000	18.000	16.000
OCT	12.000	13.000	18.000	13.000	16.000	12.000
NOV	5.500	6.000	21.000	11.000	14.500	10.000
DEC	2.500	3.000	19.000	7.000	12.000	7.000
<hr/>						
FLD TURBIDITY (FTU)			DET'N LIMIT = N/A		GUIDELINE = 1.0 (A1)	
JAN	.870	.160	.160	.170	.200	.310
FEB	.530	.260	.180	.210	.220	.210
MAR	.580	.180	.	.	.030	.350
APR	.370	.230	.180	.160	.	.
MAY	.950	.170	.150	.150	.340	.200
JUN	.600	.650	.150	.130	.180	.190
JUL	.300	.170	.300	.300	.370	.330
AUG	.800	.170	.230	.300	.	.
SEP	.790	.230	.220	.220	.280	.240
OCT	.780	.260	.300	.240	.300	.280
NOV	.870	.180	.200	.230	.380	.260
DEC	1.200	.120	.100	.140	.230	.240

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

		RAW	TREATED	SITE 1		SITE 2	
				STANDING	FREE FLOW	STANDING	FREE FLOW

CHEMISTRY (LAB)							
ALKALINITY (MG/L)				DET'N LIMIT = .200		GUIDELINE = 30-500 (A4)	
JAN	101.800	95.900	98.000	99.800	101.100	97.100	
FEB	100.700	92.500	94.600	94.200	93.000	93.200	
MAR	102.000	96.600	.	.	97.700	99.800	
APR	99.300	90.900	91.800	91.900	.	.	
MAY	99.700	97.000	95.500	95.400	95.200	95.300	
JUN	100.100	94.700	95.700	95.000	95.300	94.700	
JUL	102.600	95.000	95.600	95.400	94.500	94.400	
AUG	99.700	93.200	92.300	92.200	.	.	
SEP	96.000	88.500	88.700	89.000	88.500	88.600	
OCT	99.400	94.300	95.600	95.500	94.800	95.400	
NOV	101.900	97.200	97.800	97.400	97.000	97.300	
DEC	101.900	97.400	97.600	97.200	96.800	96.700	

CALCIUM (MG/L)				DET'N LIMIT = .100		GUIDELINE = 100 (F2)	
JAN	40.600	40.400	41.400	41.600	39.600	39.600	
FEB	39.600	40.000	40.200	40.800	40.200	40.600	
MAR	42.400	41.600	.	.	41.800	42.200	
APR	37.800	39.600	39.200	39.000	.	.	
MAY	39.800	40.000	40.000	40.600	39.600	40.200	
JUN	40.200	40.200	40.400	40.400	39.600	40.000	
JUL	41.200	39.400	39.000	39.200	39.600	39.000	
AUG	40.600	39.400	39.600	40.600	.	.	
SEP	35.800	37.000	38.400	37.800	36.600	37.000	
OCT	39.400	39.200	40.800	39.800	39.600	39.200	
NOV	39.800	40.400	40.000	40.600	39.400	39.800	
DEC	40.800	40.300	40.600	39.700	40.400	39.700	

CHLORIDE (MG/L)				DET'N LIMIT = .200		GUIDELINE = 250 (A3)	
JAN	24.000	25.700	25.800	25.900	26.100	26.100	
FEB	22.900	25.600	26.100	26.200	26.000	25.500	
MAR	22.900	24.900	.	.	24.400	24.700	
APR	22.700	25.800	25.800	25.900	.	.	
MAY	23.200	24.600	24.900	24.800	24.700	24.600	
JUN	22.600	24.000	24.500	24.100	24.100	24.200	
JUL	22.400	25.000	25.200	25.300	25.400	25.300	
AUG	22.500	25.100	25.300	25.300	.	.	
SEP	21.900	24.800	25.200	25.000	24.900	24.900	
OCT	22.200	23.700	24.300	24.100	23.800	23.900	
NOV	22.500	24.000	24.200	24.200	24.200	24.000	
DEC	22.700	24.400	24.300	24.300	24.200	24.200	

COLOUR (HZU)				DET'N LIMIT = .5		GUIDELINE = 5.0 (A3)	
JAN	1.500 <T	.500 <T	1.000 <T	1.000 <T	1.000 <T	1.000 <T	
FEB	2.000 <T	1.000 <T	1.000 <T	1.000 <T	1.500 <T	1.000 <T	
MAR	2.000 <T	1.000 <T	.	.	2.000 <T	2.000 <T	

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT			DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
APR	1.500 <T	.500 <T	.500 <T	.500 <T	.	.
MAY	2.000 <T	1.000 <T	1.500 <T	1.500 <T	2.000 <T	1.500 <T
JUN	2.000 <T	1.000 <T	1.000 <T	1.000 <T	1.500 <T	2.000 <T
JUL	2.500	1.000 <T	1.000 <T	.500 <T	1.000 <T	1.500 <T
AUG	1.500 <T	.500 <T	1.000 <T	1.000 <T	.	.
SEP	2.000 <T	.500 <T	1.000 <T	1.000 <T	1.000 <T	1.000 <T
OCT	2.000 <T	1.000 <T	1.000 <T	1.000 <T	1.500 <T	2.000 <T
NOV	2.000 <T	1.000 <T	1.000 <T	.500 <T	1.500 <T	1.000 <T
DEC	1.500 <T	.500 <T	1.000 <T	1.000 <T	1.500 <T	2.000 <T
<hr/>						
CONDUCTIVITY (UMHO/CM)			DET'N LIMIT = 1		GUIDELINE = 400 (F2)	
JAN	329	333	335	334	334	334
FEB	324	331	335	334	331	331
MAR	337	341	.	.	341	341
APR	328	335	337	335	.	.
MAY	323	327	327	328	326	328
JUN	323	326	333	327	326	326
JUL	324	328	330	330	328	330
AUG	316	320	323	321	.	.
SEP	311	317	319	319	318	318
OCT	322	325	331	328	327	329
NOV	326	329	331	331	331	331
DEC	332	333	335	334	333	333
<hr/>						
FLUORIDE (MG/L)			DET'N LIMIT = .01		GUIDELINE = 2.400 (A1)	
JAN	.140	1.260	1.200	1.220	1.300	1.260
FEB	.120	1.460	1.240	1.220	1.240	1.260
MAR	.120	1.160	.	.	1.180	1.200
APR	.120	1.220	1.240	1.240	.	.
MAY	.160	1.180	1.220	1.200	1.200	1.200
JUN	.120	1.200	1.300	1.160	1.160	1.180
JUL	.140	1.280	1.240	1.200	1.180	1.180
AUG	.140	1.160	1.200	1.200	.	.
SEP	.120	1.200	1.220	1.220	1.220	1.220
OCT	.120	1.260	1.280	1.280	1.280	1.260
NOV	.140	1.120	1.160	1.160	1.180	1.160
DEC	.140	1.360	1.280	1.300	1.280	1.200
<hr/>						
HARDNESS (MG/L)			DET'N LIMIT = .500		GUIDELINE = 80-100 (A4)	
JAN	135.000	135.000	137.000	139.000	134.000	133.000
FEB	134.000	135.000	135.000	137.000	135.000	136.000
MAR	142.000	140.000	.	.	141.000	142.000
APR	131.000	134.000	134.000	134.000	.	.
MAY	133.000	134.000	135.000	136.000	133.000	135.000
JUN	135.000	136.000	137.000	135.000	134.000	135.000
JUL	137.000	134.000	132.000	132.000	134.000	133.000
AUG	137.000	132.000	134.000	136.000	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW

TREATED

SITE 1

SITE 2

STANDING

FREE FLOW

STANDING

FREE FLOW

SEP	123.000	126.060	130.000	128.000	126.000	126.000
OCT	133.000	133.000	137.000	133.000	135.000	133.000
NOV	135.000	136.000	134.000	137.000	134.000	135.000
DEC	136.300	135.000	135.000	132.900	134.800	132.900

IONCAL (DMNSLESS)

DET'N LIMIT = N/A

GUIDELINE = N/A

JAN	.805	.796	1.224	1.305	2.722	.432
FEB	2.614	.182	1.091	.125	.235	.709
MAR	3.139	3.567	.	.	4.195	3.230
APR	1.427	1.786	1.556	1.393	.	.
MAY	1.107	.307	1.388	1.846	.272	1.481
JUN	.452	2.031	.682	1.193	.391	.914
JUL	.810	.567	1.376	1.476	.284	.723
AUG	1.242	.444	.828	2.022	.	.
SEP	2.152	.735	2.079	1.086	.168	.081
OCT	1.093	2.029	3.283	1.229	2.029	1.474
NOV	.724	1.181	2.428	1.300	2.193	1.548
DEC	1.442	1.335	1.066	2.607	.326	1.939

LANGELIERS INDEX (DMNSLESS)

DET'N LIMIT = N/A

GUIDELINE = N/A

JAN	.382	.154	.163	-.036	-.342	.100
FEB	.397	.044	.125	.120	.148	.104
MAR	.551	.539	.	.	.586	.559
APR	.380	.162	.201	.200	.	.
MAY	.545	.495	.478	.504	.542	.459
JUN	.241	.147	.273	.150	.193	.175
JUL	.502	.359	.387	.429	.469	.332
AUG	.434	.312	.339	.350	.	.
SEP	.424	.212	.259	.254	.217	.213
OCT	.519	.374	.397	.426	.411	.409
NOV	.424	.420	.368	.483	.368	.404
DEC	.594	.539	.543	.542	.588	.550

MAGNESIUM (MG/L)

DET'N LIMIT = .050

GUIDELINE = 30 (F2)

JAN	8.200	8.200	8.200	8.400	8.500	8.400
FEB	8.500	8.500	8.500	8.500	8.500	8.300
MAR	8.700	8.800	.	.	8.800	9.000
APR	9.000	8.600	8.800	8.800	.	.
MAY	8.200	8.300	8.500	8.400	8.300	8.400
JUN	8.500	8.500	8.700	8.400	8.600	8.400
JUL	8.300	8.600	8.400	8.300	8.600	8.500
AUG	8.500	8.200	8.400	8.300	.	.
SEP	8.200	8.200	8.300	8.200	8.200	8.200
OCT	8.600	8.500	8.400	8.200	8.700	8.700
NOV	8.600	8.400	8.400	8.500	8.700	8.600
DEC	8.350	8.350	8.200	8.200	8.200	8.200

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT			DISTRIBUTION SYSTEM			
RAW		TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
SODIUM (MG/L)			DET'N LIMIT = .200		GUIDELINE = 200 (C3)	
JAN	12.800	12.800	13.000	13.200	13.000	13.000
FEB	11.200	11.600	11.600	11.800	11.800	11.800
MAR	12.200	12.200	.	.	12.400	12.600
APR	12.000	12.000	12.200	12.400	.	.
MAY	12.000	12.200	12.200	12.200	12.000	12.000
JUN	11.400	11.800	12.200	11.400	11.600	11.600
JUL	12.000	12.000	12.000	11.800	11.800	11.800
AUG	11.400	11.400	11.600	11.400	.	.
SEP	12.400	12.400	12.400	12.400	12.400	11.800
OCT	12.400	12.200	12.600	12.400	12.200	12.200
NOV	12.200	12.000	12.200	11.800	12.000	12.000
DEC	11.700	11.600	11.800	11.500	11.900	11.800
AMMONIUM TOTAL (MG/L)			DET'N LIMIT = 0.002		GUIDELINE = .05 (F2)	
JAN	.006 <T	.122	.128	.136	.124	.128
FEB	.018	.178	.174	.160	.172	.170
MAR	BDL	.138	.	.	.150	.152
APR	.016	.148	.158	.138	.	.
MAY	BDL	.122	.110	.112	.122	.120
JUN	.010	.106	.080	.096	.106	.114
JUL	.022	.112	.084	.108	.110	.118
AUG	.014	.110	.084	.112	.	.
SEP	.012	.112	.060	.104	.088	.100
OCT	BDL	.100	.110	.112	.102	.104
NOV	BDL	.106	.030	.096	.080	.086
DEC	BDL	.108	.088	.098	.088	.092
NITRITE (MG/L)			DET'N LIMIT = 0.001		GUIDELINE = 1.000 (A1)	
JAN	.002 <T	.001 <T	.003 <T	.001 <T	.002 <T	.001 <T
FEB	.002 <T	.002 <T	.008	.004 <T	.004 <T	.003 <T
MAR	.004 <T	.004 <T	.	.	.008	.005
APR	.002 <T	.001 <T	.005	.001 <T	.	.
MAY	.003 <T	.002 <T	.006	.002 <T	.006	.003 <T
JUN	.007	.004 <T	.028	.006	.014	.007
JUL	.008	.002 <T	.036	.004 <T	.007	.004 <T
AUG	.003 <T	.001 <T	.033	.003 <T	.	.
SEP	.005	.001 <T	.064	.002 <T	.022	.007
OCT	.002 <T	.001 <T	.006	.003 <T	.014	.008
NOV	.001 <T	.002 <T	.066	.003 <T	.014	.004 <T
DEC	.002 <T	.002 <T	.016	.002 <T	.010	.003 <T
TOTAL NITRATES (MG/L)			DET'N LIMIT = .020		GUIDELINE = 10.000 (A1)	
JAN	.400	.395	.405	.400	.415	.410
FEB	.380	.405	.415	.410	.405	.400
MAR	.385	.390	.	.	.395	.390
APR	.335	.335	.345	.320	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
<hr/>						
MAY	.325	.325	.340	.325	.330	.325
JUN	.400	.435	.480	.440	.455	.430
JUL	.355	.350	.400	.375	.385	.370
AUG	.195	.200	.215	.195	.	.
SEP	.155	.160	.220	.165	.190	.175
OCT	.245	.265	.305	.285	.285	.280
NOV	.350	.430	.465	.400	.425	.415
DEC	.400	.405	.425	.400	.420	.410
<hr/>						
NITROGEN TOT KJELD (MG/L)			DET'N LIMIT = .020		GUIDELINE = N/A	
JAN	.230	.320	.330	.300	.300	.290
FEB	.200	.300	.340	.310	.310	.310
MAR	.240	.310	.	.	.330	.300
APR	.250	.270	.280	.270	.	.
MAY	.250	.290	.300	.310	.300	.320
JUN	.250	.260	.270	.260	.290	.290
JUL	.270	.320	.330	.320	.340	.320
AUG	.280	.300	.300	.320	.	.
SEP	.240	.300	.260	.300	.300	.300
OCT	.240	.260	.310	.280	.290	.270
NOV	.190	.290	.280	.250	.280	.260
DEC	.220	.310	.340	.270	.270	.300
<hr/>						
PH (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)	
JAN	8.210	8.010	8.000	7.790	7.500	7.960
FEB	8.240	7.920	7.990	7.980	8.020	7.970
MAR	8.360	8.380	.	.	8.420	8.380
APR	8.250	8.050	8.090	8.090	.	.
MAY	8.390	8.350	8.340	8.360	8.410	8.320
JUN	8.080	8.010	8.130	8.010	8.060	8.040
JUL	8.320	8.230	8.260	8.300	8.340	8.210
AUG	8.270	8.190	8.220	8.220	.	.
SEP	8.330	8.140	8.170	8.170	8.150	8.140
OCT	8.370	8.250	8.250	8.290	8.280	8.280
NOV	8.260	8.270	8.220	8.330	8.230	8.260
DEC	8.420	8.390	8.390	8.400	8.440	8.410
<hr/>						
PHOSPHORUS FIL REACT (MG/L)			DET'N LIMIT = .0005		GUIDELINE = N/A	
JAN	.001 <T	.003	.	.	.	.
FEB	BDL	.002 <T	.	.	.	.
MAR	.000 <T	.001 <T	.	.	.	.
APR	BDL	BDL	.	.	.	.
MAY	.000 <T	.001 <T	.	.	.	.
JUN	.000 <T	.002	.	.	.	.
JUL	BDL	.000 <T	.	.	.	.
AUG	BDL	.001 <T	.	.	.	.
SEP	BDL	.001 <T	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT			DISTRIBUTION SYSTEM			
	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
OCT	BOL	BOL	.	.	.	.
NOV	.000 <T	.002	.	.	.	.
DEC	.001 <T	.002 <T	.	.	.	.
PHOSPHORUS TOTAL (MG/L)			DET'N LIMIT = .002		GUIDELINE = .40 (F2)	
JAN	.012	.007 <T	.	.	.	.
FEB	.006 <T	.003 <T	.	.	.	.
MAR	.010	.004 <T	.	.	.	.
APR	.008 <T	.003 <T	.	.	.	.
MAY	.008 <T	.004 <T	.	.	.	.
JUN	.018	.013	.	.	.	.
JUL	.012	.007 <T	.	.	.	.
AUG	.013	.007 <T	.	.	.	.
SEP	.011	.007 <T	.	.	.	.
OCT	.010	.006 <T	.	.	.	.
NOV	.013	.006 <T	.	.	.	.
DEC	.011	.006 <T	.	.	.	.
SULPHATE (MG/L)			DET'N LIMIT = .200		GUIDELINE = 500. (A3)	
JAN	26.070	26.900	26.860	26.600	26.510	26.380
FEB	26.880	29.140	28.840	29.030	28.900	28.840
MAR	26.230	27.020	.	.	26.580	27.740
APR	26.160	28.370	28.090	28.060	.	.
MAY	26.210	26.460	26.540	27.160	26.700	26.760
JUN	26.370	26.930	29.160	26.970	27.170	27.100
JUL	25.300	26.680	26.770	26.800	26.960	27.000
AUG	25.940	27.490	27.700	27.740	.	.
SEP	24.820	27.150	27.780	27.740	26.700	26.530
OCT	26.230	26.720	26.870	26.840	27.750	26.950
NOV	26.420	29.930	30.090	30.170	30.120	29.730
DEC	27.420	28.210	28.150	28.180	27.640	28.360
TURBIDITY (FTU)			DET'N LIMIT = .02		GUIDELINE = 1.00 (A1)	
JAN	1.880	.480	.240	.500	.200	.680
FEB	1.150	.370	.400	.390	.750	.240
MAR	.850	.190 <T	.	.	.340	.370
APR	1.230	.520	.500	.520	.	.
MAY	1.330	.840	.440	.530	.680	.530
JUN	1.370	.370	.450	.340	.550	.480
JUL	1.130	.850	.960	.450	.520	.440
AUG	1.840	.990	1.340	1.050	.	.
SEP	1.460	.490	.400	.410	.370	.270
OCT	1.050	.350	.400	.400	.400	.350
NOV	2.600	.260	.390	.240 <T	.340	.270
DEC	1.740	.200 <T	.320	.230 <T	.240 <T	.270

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW

TREATED

SITE 1

SITE 2

STANDING

FREE FLOW

STANDING

FREE FLOW

METALS

SILVER (UG/L)

DET'N LIMIT = .020

GUIDELINE = 50. (A1)

JAN	.030 <T	.050 <T	.070 <T	.090 <T	.050 <T	.060 <T
FEB	BDL	BDL	.060 <T	.040 <T	.030 <T	.030 <T
MAR	.040 <T	BDL	.	.	BDL	BDL
APR	.030 <T	.040 <T	.080 <T	BDL	.	.
MAY	BDL	BDL	.040 <T	.030 <T	BDL	BDL
JUN	BDL	BDL	BDL	BDL	BDL	BDL
JUL	BDL	BDL	BDL	BDL	BDL	BDL
AUG	BDL	BDL	BDL	BDL	.	.
SEP	BDL	BDL	BDL	BDL	BDL	BDL
OCT	BDL	BDL	BDL	BDL	BDL	BDL
NOV	BDL	BDL	BDL	BDL	BDL	BDL
DEC	BDL	BDL	BDL	BDL	BDL	BDL

ALUMINUM (UG/L)

DET'N LIMIT = .050

GUIDELINE = 100.(A4)

JAN	19.720	61.480	64.960	61.480	58.000	56.840
FEB	7.772	59.160	56.840	56.840	44.080	44.080
MAR	11.020	75.400	.	.	71.920	69.600
APR	6.148	85.840	83.520	80.040	.	.
MAY	9.860	110.200	127.600	111.360	150.800	116.000
JUN	9.800	87.000	98.000	96.000	97.000	87.000
JUL	7.720	129.000	112.500	109.620	108.150	97.590
AUG	7.700	150.000	150.000	160.000	.	.
SEP	7.200	210.000	180.000	190.000	180.000	180.000
OCT	7.200	100.000	73.000	87.000	82.000	85.000
NOV	20.000	57.000	64.000	57.000	58.000	58.000
DEC	16.000	63.000	66.000	56.000	53.000	51.000

ARSENIC (UG/L)

DET'N LIMIT = 0.050

GUIDELINE = 50.0 (A1)

JAN	.800 <T	1.000 <T	.850 <T	.920 <T	.720 <T	1.100
FEB	1.900	2.100	2.200	1.500	1.700	1.800
MAR	1.600	2.000	.	.	2.300	1.800
APR	1.200	1.300	1.300	1.300	.	.
MAY	1.600	1.500	1.600	1.600	1.900	1.600
JUN	1.400	1.400	1.900	1.700	1.600	1.500
JUL	1.400	1.580	1.380	1.740	1.520	1.220
AUG	1.500	1.900	1.500	1.800	.	.
SEP	1.100	1.600	1.200	1.300	1.500	1.300
OCT	.880 <T	1.300	1.100	1.100	1.000 <T	.990 <T
NOV	.850 <T	1.300	1.200	1.000 <T	.900 <T	1.100
DEC	1.100	1.300	1.100	.940 <T	.840 <T	.880 <T

BARIUM (UG/L)

DET'N LIMIT = 0.020

GUIDELINE = 1000. (A1)

JAN	23.000	23.000	24.000	24.000	24.000	23.000
FEB	21.000	23.000	23.000	22.000	22.000	21.000
MAR	24.000	23.000	.	.	23.000	23.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
<hr/>						
APR	24.000	23.000	24.000	23.000	.	.
MAY	22.000	22.000	22.000	22.000	21.000	21.000
JUN	25.000	24.000	25.000	24.000	25.000	24.000
JUL	25.030	24.450	25.430	25.600	25.520	25.020
AUG	24.000	24.000	25.000	25.000	.	.
SEP	23.000	22.000	23.000	23.000	23.000	22.000
OCT	21.000	22.000	22.000	22.000	21.000	21.000
NOV	22.000	22.000	23.000	22.000	22.000	22.000
DEC	25.000	24.000	24.000	24.000	24.000	24.000
<hr/>						
BORON (UG/L)		DET'N LIMIT = 0.200		GUIDELINE = 5000. (A1)		
JAN	48.000	46.000	28.000	46.000	30.000	49.000
FEB	27.000	25.000	77.000	29.000	37.000	26.000
MAR	71.000	100.000	.	.	95.000	97.000
APR	53.000	170.000	45.000	55.000	.	.
MAY	27.000	29.000	31.000	27.000	25.000	26.000
JUN	40.000	27.000	53.000	54.000	40.000	28.000
JUL	55.820	34.200	38.510	43.220	53.570	30.410
AUG	55.000	57.000	46.000	43.000	.	.
SEP	45.000	43.000	32.000	30.000	44.000	34.000
OCT	25.000	34.000	40.000	30.000	27.000	26.000
NOV	25.000	33.000	38.000	24.000	25.000	25.000
DEC	28.000	28.000	27.000	25.000	25.000	24.000
<hr/>						
BERYLLIUM (UG/L)		DET'N LIMIT = 0.010		GUIDELINE = N/A		
JAN	.130 <T	.050 <T	BDL	BDL	BDL	BDL
FEB	BDL	BDL	.190 <T	BDL	BDL	.040 <T
MAR	.090 <T	.220 <T	.	.	.150 <T	.120 <T
APR	.060 <T	.040 <T	.060 <T	BDL	.	.
MAY	.020 <T	.030 <T	.030 <T	BDL	.100 <T	BDL
JUN	BDL	BDL	.100 <T	BDL	BDL	BDL
JUL	.110 <T	BDL	BDL	BDL	.030 <T	BDL
AUG	.100 <T	.110 <T	BDL	BDL	.	.
SEP	.120 <T	.100 <T	.040 <T	.040 <T	.080 <T	.090 <T
OCT	.040 <T	.030 <T	.040 <T	.030 <T	.050 <T	BDL
NOV	BDL	BDL	.020 <T	.040 <T	.040 <T	.030 <T
DEC	BDL	BDL	BDL	BDL	BDL	BDL
<hr/>						
CADMIUM (UG/L)		DET'N LIMIT = 0.050		GUIDELINE = 5.000 (A1)		
JAN	BDL	BDL	BDL	BDL	BDL	BDL
FEB	BDL	BDL	BDL	BDL	BDL	BDL
MAR	BDL	BDL	.	.	BDL	BDL
APR	BDL	BDL	BDL	BDL	.	.
MAY	BDL	.070 <T	BDL	BDL	.190 <T	BDL
JUN	.150 <T	.120 <T	.320 <T	.090 <T	.180 <T	.090 <T
JUL	BDL	BDL	.160 <T	.100 <T	.100 <T	.090 <T
AUG	.170 <T	.100 <T	.120 <T	.190 <T	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
SEP	BDL	BDL	BDL	BDL	BDL	BDL
OCT	BDL	BDL	BDL	BDL	BDL	BDL
NOV	BDL	BDL	BDL	.060 <T	BDL	BDL
DEC	BDL	BDL	BDL	BDL	BDL	.130 <T
<hr/>						
COBALT (UG/L)			DET'N LIMIT = 0.020		GUIDELINE = N/A	
JAN	.200 <T	.160 <T	.110 <T	.140 <T	.170 <T	.160 <T
FEB	.310 <T	.270 <T	.240 <T	.250 <T	.290 <T	.270 <T
MAR	.040 <T	BDL	.	.	.110 <T	.130 <T
APR	.050 <T	.080 <T	.090 <T	.050 <T	.	.
MAY	.310 <T	.230 <T	.210 <T	.210 <T	.300 <T	.220 <T
JUN	.030 <T	.060 <T	.030 <T	.130 <T	BDL	BDL
JUL	.210 <T	.200 <T	.230 <T	.210 <T	.180 <T	.260 <T
AUG	.090 <T	.100 <T	.190 <T	.090 <T	.	.
SEP	.100 <T	.090 <T	.110 <T	.040 <T	.050 <T	.040 <T
OCT	.090 <T	.090 <T	.090 <T	.070 <T	.100 <T	.100 <T
NOV	.090 <T	.220 <T	.060 <T	.050 <T	.100 <T	.210 <T
DEC	.090 <T	.130 <T	.050 <T	.140 <T	.110 <T	.140 <T
<hr/>						
CHROMIUM (UG/L)			DET'N LIMIT = 0.100		GUIDELINE = 50. (A1)	
JAN	5.500	5.300	.660 <T	4.700	1.100	5.200
FEB	.430 <T	.280 <T	6.200	.650 <T	1.500	.530 <T
MAR	4.600	8.200	.	.	7.400	7.300
APR	1.200	5.300	.800 <T	1.300	.	.
MAY	1.900	2.200	2.600	1.800	.460 <T	1.500
JUN	3.400	.910 <T	5.500	5.900	3.100	.850 <T
JUL	6.320	1.810	2.340	3.640	5.980	.750 <T
AUG	5.600	5.600	3.400	3.300	.	.
SEP	5.400	5.100	2.000	1.600	4.800	2.400
OCT	1.100	3.400	2.300	1.900	1.300	1.100
NOV	.400 <T	1.600	2.800	.170 <T	.250 <T	.150 <T
DEC	.660 <T	BDL	BDL	BDL	BDL	BDL
<hr/>						
COPPER (UG/L)			DET'N LIMIT = .100		GUIDELINE = 1000 (A3)	
JAN	21.000	17.000	130.000	14.000	13.000	4.100
FEB	20.000	39.000	19.000	180.000	13.000	3.600
MAR	19.000	16.000	.	.	9.800	2.800
APR	12.000	19.000	120.000	13.000	.	.
MAY	17.000	4.300	52.000	5.000	5.700	2.100
JUN	31.000	4.600	78.000	12.000	10.000	2.500
JUL	32.530	22.880	98.310	13.030	10.430	3.510
AUG	46.000	10.000	76.000	12.000	.	.
SEP	36.000	7.500	53.000	6.900	9.500	3.100
OCT	31.000	5.300	31.000	9.300	8.700	4.100
NOV	33.000	5.100	87.000	8.300	12.000	3.200
DEC	25.000	5.500	100.000	6.600	13.000	2.700 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

	RAW		TREATED		SITE 1		SITE 2	
					STANDING	FREE FLOW	STANDING	FREE FLOW
					DET'N LIMIT = 4.000		GUIDELINE = 300. (A3)	
IRON (UG/L)								
JAN	32.000	<T	7.300	<T	23.000	<T	30.000	<T
FEB	9.000	<T	8.300	<T	15.000	<T	31.000	<T
MAR	17.000	<T	8.100	<T	.	.	62.000	64.000
APR	BDL		BDL		BDL	5.500 <T	.	.
MAY	BDL		BDL		BDL	BDL	59.000	28.000 <T
JUN	11.000	<T	6.700	<T	7.100	<T	44.000	<T
JUL	7.480	<T	5.740	<T	6.170	<T	30.440	<T
AUG	8.200	<T	BDL		BDL	5.400 <T	.	.
SEP	6.400	<T	BDL		8.800	<T	37.000	<T
OCT	11.000	<T	7.200	<T	BDL	BDL	34.000	<T
NOV	33.000	<T	BDL		BDL	6.600 <T	45.000	<T
DEC	26.000	<T	BDL		BDL	BDL	44.000	<T
MERCURY (UG/L)					DET'N LIMIT = 0.010		GUIDELINE = 1.000 (A1)	
JAN	BDL		.020	<T	.	BDL	.	.030 <T
FEB	.020	<T	.040	<T	.	.030 <T	.	BDL
MAR	.070		.040	<T	.	.	.	.050 <T
APR	BDL		BDL		.	BDL	.	.
MAY	BDL		BDL		.	BDL	.	BDL
JUN	BDL		BDL		.	BDL	.	BDL
JUL	.020	<T	.020	<T	.	.030 <T	.	.020 <T
AUG	BDL		BDL		.	BDL	.	.
SEP	BDL		BDL		.	BDL	.	BDL
OCT	BDL		BDL		.	BDL	.	BDL
NOV	BDL		BDL		.	BDL	.	BDL
DEC	.020	<T	.020	<T	.	.020 <T	.	.020 <T
MANGANESE (UG/L)					DET'N LIMIT = .050		GUIDELINE = 50.0 (A3)	
JAN	2.500		.300	<T	.360	<T	1.200	1.100
FEB	1.100		.120	<T	.250	<T	1.000	1.000
MAR	1.300		.300	<T	.	.	1.500	1.600
APR	.850		.160	<T	.270	<T	.	.
MAY	1.300		.120	<T	.220	<T	1.200	.790
JUN	1.700		.530		.630		1.600	1.700
JUL	1.910		.760		.870		1.770	1.690
AUG	1.500		.350	<T	.540	.480 <T	.	.
SEP	1.000		.320	<T	.540	.480 <T	1.500	1.400
OCT	1.200		.340	<T	.370	<T	1.100	1.300
NOV	3.800		.260	<T	.400	<T	1.500	1.200
DEC	2.800		.300	<T	.270	<T	1.100	1.200
MOLYBDENUM (UG/L)					DET'N LIMIT = 0.020		GUIDELINE = N/A	
JAN	1.200		1.300		1.300	1.300	1.200	1.300
FEB	1.500		1.500		1.500	1.600	1.600	1.500
MAR	1.500		1.700		.	.	1.500	1.500
APR	1.300		1.500		1.500	1.400	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW

TREATED

SITE 1

SITE 2

STANDING

FREE FLOW

STANDING

FREE FLOW

MAY	1.500	1.500	1.500	1.400	1.300	1.300
JUN	1.400	1.600	1.600	1.400	1.600	1.500
JUL	1.370	1.800	1.510	1.540	1.720	1.630
AUG	1.500	1.400	1.400	1.400	.	.
SEP	1.300	1.300	1.100	1.200	1.100	1.300
OCT	1.100	1.200	1.200	1.200	1.300	1.200
NOV	1.100	1.200	1.200	1.100	1.200	1.200
DEC	1.300	1.300	1.300	1.200	1.200	1.200

NICKEL (UG/L)

DET'N LIMIT = 0.100

GUIDELINE = 50. (F3)

JAN	1.600 <T	1.800 <T	2.300	1.700 <T	2.400	1.700 <T
FEB	2.600	2.000 <T	2.000 <T	5.800	2.700	2.400
MAR	1.600 <T	1.100 <T	.	.	1.600 <T	1.300 <T
APR	.880 <T	1.200 <T	2.100	.710 <T	.	.
MAY	2.500	2.200	2.900	2.800	3.000	2.800
JUN	1.300 <T	1.600 <T	3.100	1.400 <T	1.600 <T	1.400 <T
JUL	3.280	3.160	4.700	3.320	3.810	3.460
AUG	.880 <T	.760 <T	2.900	.710 <T	.	.
SEP	1.300 <T	1.000 <T	3.700	1.200 <T	2.300	.970 <T
OCT	.910 <T	.730 <T	4.300	.760 <T	1.300 <T	1.000 <T
NOV	.850 <T	.400 <T	1.800 <T	.950 <T	2.500	.690 <T
DEC	1.400 <T	1.700 <T	1.800 <T	1.500 <T	2.300	1.200 <T

LEAD (UG/L)

DET'N LIMIT = 0.050

GUIDELINE = 50. (A1)

JAN	.280	.420	8.200	.700	1.100	.340
FEB	.570	1.400	1.700	9.500	1.800	.930
MAR	.410	.610	.	.	1.300	.330
APR	.190 <T	.490	7.700	.970	.	.
MAY	.930	.460	3.900	.560	.660	.310
JUN	.930	.350	7.000	1.100	1.200	.220
JUL	1.090	1.120	7.790	1.580	1.930	.500
AUG	.980	1.000	8.300	1.400	.	.
SEP	.540	2.800	5.400	.700	.940	.290
OCT	.410	1.800	2.300	.960	1.100	.330
NOV	.400	.600	5.600	.450	.600	.220
DEC	.340 <T	.760	5.600	.600	.650	.120 <T

ANTIMONY (UG/L)

DET'N LIMIT = .050

GUIDELINE = 146. (D4)

JAN	.510	.550	.450	.500	.450	.530
FEB	.820	.790	.840	.900	.820	.930
MAR	.890	.780	.	.	.900	.820
APR	.740	.780	.730	.730	.	.
MAY	.940	1.000	.870	.890	.950	.840
JUN	.840	.690	.810	.860	.830	.820
JUL	.870	.800	.870	.950	.820	.810
AUG	.850	.780	.920	.740	.	.
SEP	.630	.650	.720	.680	.720	.580

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
OCT	.580	.620	.600	.630	.580	.560
NOV	.480	.750	.530	.610	.530	.830
DEC	.500 <T	.500 <T	.450 <T	.620	.630	.500 <T
<hr/>						
SELENIUM (UG/L)		DET'N LIMIT = 0.200		GUIDELINE = 10. (A1)		
JAN	BDL	1.400 <T	1.000 <T	1.900 <T	1.400 <T	2.300 <T
FEB	.920 <T	BDL	4.800 <T	4.000 <T	.850 <T	3.500 <T
MAR	2.200 <T	3.300 <T	.	.	3.800 <T	4.500 <T
APR	2.800 <T	3.400 <T	3.600 <T	3.200 <T	.	.
MAY	2.500 <T	2.500 <T	6.400 <T	2.500 <T	4.500 <T	5.600 <T
JUN	BDL	3.900 <T	4.600 <T	4.400 <T	2.400 <T	2.100 <T
JUL	BDL	BDL	BDL	1.660 <T	BDL	1.660 <T
AUG	BDL	2.900 <T	1.500 <T	1.900 <T	.	.
SEP	BDL	BDL	1.100 <T	BDL	BDL	1.300 <T
OCT	BDL	1.200 <T	1.100 <T	1.400 <T	BDL	1.300 <T
NOV	BDL	1.200 <T	1.700 <T	1.100 <T	1.100 <T	BDL
DEC	BDL	BDL	BDL	BDL	BDL	BDL
<hr/>						
STROMTIUM (UG/L)		DET'N LIMIT = .050		GUIDELINE = N/A		
JAN	180.000	180.000	180.000	170.000	180.000	170.000
FEB	170.000	170.000	170.000	170.000	170.000	170.000
MAR	180.000	180.000	.	.	180.000	180.000
APR	180.000	180.000	180.000	180.000	.	.
MAY	170.000	170.000	170.000	180.000	170.000	170.000
JUN	170.000	160.000	190.000	170.000	170.000	170.000
JUL	193.000	188.700	194.920	197.110	194.920	189.550
AUG	180.000	180.000	180.000	180.000	.	.
SEP	180.000	180.000	180.000	190.000	180.000	180.000
OCT	170.000	180.000	190.000	180.000	180.000	180.000
NOV	180.000	180.000	180.000	170.000	170.000	180.000
DEC	170.000	170.000	170.000	180.000	180.000	180.000
<hr/>						
TITANIUM (UG/L)		DET'N LIMIT = .050		GUIDELINE = N/A		
JAN	4.600	2.800	2.400	2.800	2.300	2.700
FEB	6.400	7.000	8.300	7.700	8.300	7.200
MAR	7.300	5.700	.	.	7.100	7.400
APR	4.700	6.400	6.400	6.400	.	.
MAY	2.300	3.000	1.600 <T	2.200	3.900	3.400
JUN	7.400	6.200	7.100	6.300	7.000	6.400
JUL	6.170	6.950	6.880	6.360	6.800	6.610
AUG	7.100	6.600	7.100	6.900	.	.
SEP	4.500	7.100	5.100	4.800	5.200	4.800
OCT	5.300	4.900	3.100	2.700	2.700	2.800
NOV	5.800	5.000	3.500	2.800	3.000	2.900
DEC	3.000 <T	2.500 <T	2.500 <T	2.700 <T	2.600 <T	2.700 <T
<hr/>						
THALLIUM (UG/L)		DET'N LIMIT = .010		GUIDELINE = 13. (D4)		

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW		TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JAN	BDL	BDL	BDL	BDL	BDL	BDL
FEB	BDL	.130 <T	BDL	.060 <T	BDL	BDL
MAR	BDL	.040 <T	.	.	BDL	BDL
APR	BDL	BDL	BDL	BDL	.	.
MAY	.070 <T	.150 <T	.070 <T	.120 <T	.130 <T	.040 <T
JUN	BDL	BDL	BDL	BDL	BDL	BDL
JUL	.180 <T	.090 <T	.040 <T	.090 <T	.060 <T	.060 <T
AUG	BDL	BDL	BDL	BDL	.	.
SEP	BDL	BDL	BDL	.020 <T	BDL	.020 <T
OCT	BDL	BDL	BDL	BDL	BDL	BDL
NOV	BDL	BDL	BDL	.030 <T	.030 <T	.020 <T
DEC	BDL	BDL	BDL	BDL	BDL	BDL
URANIUM (UG/L)			DET'N LIMIT = .020		GUIDELINE = 20. (A2)	
JAN	.290	.360	.370	.380	.380	.340
FEB	.500	.730	.760	.660	.650	.760
MAR	.530	.510	.	.	.500	.540
APR	.410	.480	.510	.500	.	.
MAY	.490	.500	.520	.580	.490	.480
JUN	.600	.590	.700	.600	.600	.740
JUL	.830	.780	.750	.710	.700	.720
AUG	.630	.570	.650	.640	.	.
SEP	.290	.310	.310	.320	.360	.270
OCT	.270	.310	.360	.340	.310	.320
NOV	.260	.350	.390	.350	.340	.380
DEC	.340 <T	.390 <T	.320 <T	.350 <T	.330 <T	.310 <T
VANADIUM (UG/L)			DET'N LIMIT = .050		GUIDELINE = N/A	
JAN	.240 <T	.230 <T	.250 <T	.280 <T	.230 <T	.250 <T
FEB	.400 <T	.390 <T	.410 <T	.360 <T	.340 <T	.350 <T
MAR	.290 <T	.210 <T	.	.	.290 <T	.230 <T
APR	.240 <T	.250 <T	.260 <T	.230 <T	.	.
MAY	.360 <T	.350 <T	.380 <T	.360 <T	.380 <T	.360 <T
JUN	.320 <T	.270 <T	.360 <T	.300 <T	.360 <T	.270 <T
JUL	.380 <T	.420 <T	.420 <T	.380 <T	.360 <T	.380 <T
AUG	.330 <T	.370 <T	.450 <T	.420 <T	.	.
SEP	.260 <T	.330 <T	.310 <T	.300 <T	.320 <T	.290 <T
OCT	.240 <T	.250 <T	.250 <T	.240 <T	.220 <T	.210 <T
NOV	.230 <T	.240 <T	.290 <T	.250 <T	.290 <T	.230 <T
DEC	.350 <T	.310 <T	.400 <T	.200 <T	.260 <T	.260 <T
ZINC (UG/L)			DET'N LIMIT = .001		GUIDELINE = 5000. (A3)	
JAN	1.900	2.900	24.000	2.400	4.900	3.000
FEB	1.800	3.400	3.200	40.000	14.000	2.700
MAR	2.300	3.500	.	.	5.500	2.800
APR	1.800	2.700	26.000	2.400	.	.
MAY	2.700	2.300	13.000	1.700	4.300	1.900

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
JUN	3.800	3.000	26.000	4.100	10.000	3.200
JUL	3.170	2.990	31.350	3.320	10.740	3.420
AUG	2.700	2.600	37.000	3.700	.	.
SEP	1.900	2.600	36.000	2.300	6.900	1.700
OCT	1.900	1.700	31.000	6.000	4.800	1.700
NOV	2.300	2.200	25.000	2.400	7.800	2.700
DEC	2.400	1.700 <T	32.000	2.400	7.600	1.700 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW

TREATED

SITE 1

SITE 2

STANDING

FREE FLOW

STANDING

FREE FLOW

PESTICIDES & PCB

ALPHA BHC (NG/L)

DET'N LIMIT = 1.000

GUIDELINE = 700 (G)

JAN	BDL	2.000 <T	.	BDL	.	BDL
FEB	1.000 <T	1.000 <T	.	BDL	.	BDL
MAR	2.000 <T	2.000 <T	.	.	.	BDL
APR	BDL	1.000 <T	.	1.000 <T	.	.
MAY	2.000 <T	2.000 <T	.	BDL	.	1.000 <T
JUN	BDL	BDL	.	BDL	.	BDL
JUL	2.000 <T	2.000 <T	.	1.000 <T	.	1.000 <T
AUG	2.000 <T	2.000 <T	.	3.000 <T	.	.
SEP	BDL	1.000 <T	.	BDL	.	1.000 <T
OCT	1.000 <T	1.000 <T	.	1.000 <T	.	1.000 <T
NOV	1.000 <T	2.000 <T	.	2.000 <T	.	2.000 <T
DEC	BDL	BDL	.	BDL	.	1.000 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW		TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW

PHENOLICS						
PHENOLICS (UG/L)			DET'N LIMIT = 0.2		GUIDELINE = 2.00 (A3)	
JAN	1.600	1.800	.	.	.	.
FEB	1.200	1.200	.	.	.	.
MAR	1.200	1.000	.	.	.	.
APR	.800 <T	1.000 <T	.	.	.	.
MAY	1.400	1.000 <T	.	.	.	.
JUN	.600 <T	1.000 <T	.	.	.	.
JUL	.800 <T	1.000	.	.	.	.
AUG	1.200	1.600	.	.	.	.
SEP	1.800	2.600	.	.	.	.
OCT	.600 <T	2.200	.	.	.	.
NOV	.600 <T	1.000	.	.	.	.
DEC	BDL	.600 <T	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW		TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
<hr/>						
VOLATILES						
TOLUENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 24.0 (B4)	
JAN	BDL	.050 <T	.	.050 <T	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	.050 <T	.	.	.	.100 <T
APR	.150 <T	.150 <T	.	.100 <T	.	.
MAY	BDL	.100 <T	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	.150 <T	.150 <T	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	.150 <T	.	BDL	.	IU
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
<hr/>						
ETHYLBENZENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 2.4 (B4)	
JAN	BDL	.100 <T	.	.050 <T	.	BDL
FEB	.100 <T	BDL	.	.050 <T	.	BDL
MAR	BDL	.100 <T	.	.	.	.050 <T
APR	.100 <T	.150 <T	.	.150 <T	.	.
MAY	BDL	.150 <T	.	.050 <T	.	BDL
JUN	.050 <T	BDL	.	BDL	.	BDL
JUL	.050 <T	.050 <T	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	IU
OCT	BDL	BDL	.	BDL	.	BDL
NOV	.050 <T	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
<hr/>						
M-XYLENE (UG/L)			DET'N LIMIT = .100		GUIDELINE = 300 (B4)	
JAN	BDL	.100 <T	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	.	.	BDL
APR	.200 <T	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	.100 <T	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	IU
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
<hr/>						
O-XYLENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 300 (B4)	
JAN	BDL	.050 <T	.	BDL	.	BDL
FEB	.050 <T	BDL	.	.050 <T	.	BDL
MAR	BDL	BDL	.	.	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	1U
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
<hr/>						
STYRENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 46.5 (D2)		
JAN	BDL	.400 <T	.	.100 <T	.	BDL
FEB	.050 <T	.350 <T	.	.350 <T	.	.200 <T
MAR	BDL	.350 <T	.	.	.	.300 <T
APR	.750	.400 <T	.	.400 <T	.	.
MAY	.100 <T	.500 UCS	.	.150 <T	.	.050 <T
JUN	.200 <T	.050 <T	.	.100 <T	.	.050 <T
JUL	.300 <T	.200 <T	.	.100 <T	.	.050 <T
AUG	.100 <T	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	1U
OCT	BDL	.050 <T	.	BDL	.	BDL
NOV	.350 <T	.100 <T	.	.100 <T	.	.050 <T
DEC	BDL	.050 <T	.	.050 <T	.	BDL
<hr/>						
CHLOROFORM (UG/L)		DET'N LIMIT = .100		GUIDELINE = 350 (A1+)		
JAN	BDL	6.100	.	6.000	.	5.800
FEB	BDL	6.100	.	6.000	.	6.200
MAR	.200 <T	4.800	.	.	.	4.800
APR	.200 <T	7.600	.	8.300	.	.
MAY	.300 <T	7.200	.	7.900	.	8.200
JUN	BDL	5.600	.	6.300	.	5.800
JUL	BDL	6.200	.	6.100	.	5.700
AUG	2.400	10.100	.	11.300	.	.
SEP	BDL	10.000	.	10.400	.	1U
OCT	BDL	7.300	.	7.500	.	7.200
NOV	BDL	5.300	.	5.100	.	5.300
DEC	.200 <T	6.500	.	6.400	.	6.000
<hr/>						
111, TRICHLOROETHANE (UG/L)		DET'N LIMIT = .020		GUIDELINE = 200 (D1)		
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	.020 <T	.	BDL
MAR	BDL	BDL	.	.	.	BDL
APR	.120 <T	BDL	.	BDL	.	.
MAY	.020 <T	.020 <T	.	.020 <T	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

	RAW	TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
SEP	BDL	BDL	.	BDL	.	!U
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	.020 <T	.	BDL
<hr/>						
CARBON TETRACHLORIDE (UG/L)			DET'N LIMIT = .200		GUIDELINE = 5.0 (D1)	
JAN	BDL	.800 <T	.	.600 <T	.	.600 <T
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	.	.	BDL
APR	BDL	.400 <T	.	.400 <T	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	!U
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
<hr/>						
DICHLOROBROMOMETHANE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 350 (A1+)	
JAN	BDL	6.150	.	6.500	.	6.400
FEB	BDL	6.300	.	6.200	.	6.500
MAR	.100 <T	5.150	.	.	.	5.250
APR	.150 <T	6.200	.	6.500	.	.
MAY	BDL	6.100	.	6.600	.	7.100
JUN	BDL	5.500	.	6.000	.	5.800
JUL	BDL	5.550	.	5.650	.	5.400
AUG	2.000	8.250	.	8.650	.	.
SEP	BDL	7.600	.	7.800	.	!U
OCT	BDL	6.150	.	6.850	.	6.500
NOV	BDL	5.700	.	5.650	.	5.900
DEC	.100 <T	6.650	.	6.750	.	6.500
<hr/>						
CHLORODIBROMOMETHANE (UG/L)			DET'N LIMIT = .100		GUIDELINE = 350 (A1+)	
JAN	BDL	3.800	.	4.300	.	4.100
FEB	BDL	3.700	.	3.800	.	4.000
MAR	BDL	3.200	.	.	.	3.300
APR	BDL	3.500	.	3.500	.	.
MAY	BDL	3.900	.	4.200	.	4.300
JUN	BDL	3.200	.	3.800	.	3.600
JUL	BDL	3.100	.	3.100	.	3.300
AUG	1.200	4.200	.	4.700	.	.
SEP	BDL	4.400	.	4.700	.	!U
OCT	BDL	4.400	.	4.400	.	5.500
NOV	BDL	3.600	.	3.700	.	4.000
DEC	BDL	3.300	.	3.200	.	3.300

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW		TREATED	SITE 1		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW
T-CHLOROETHYLENE (UG/L)			DET'N LIMIT = .050		GUIDELINE = 10.0 (C2)	
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	.	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	.100 <T	.	.050 <T	.	BDL
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	IU
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	BDL	.	BDL
BROMOFORM (UG/L)			DET'N LIMIT = .200		GUIDELINE = 350 (A1+)	
JAN	BDL	.600 <T	.	.600 <T	.	.600 <T
FEB	BDL	.400 <T	.	.600 <T	.	.600 <T
MAR	BDL	.600 <T	.	.	.	.600 <T
APR	BDL	.600 <T	.	.600 <T	.	.
MAY	BDL	.600 <T	.	.600 <T	.	.600 <T
JUN	BDL	.400 <T	.	.600 <T	.	.400 <T
JUL	BDL	.600 <T	.	.600 <T	.	.600 <T
AUG	.200 <T	.600 <T	.	.600 <T	.	.
SEP	BDL	.600 <T	.	.600 <T	.	IU
OCT	BDL	.800 <T	.	.600 <T	.	.800 <T
NOV	BDL	.600 <T	.	.600 <T	.	.600 <T
DEC	BDL	.600 <T	.	.800 <T	.	.600 <T
1,4 DICHLOROBENZENE (UG/L)			DET'N LIMIT = .100		GUIDELINE = 5.0 (B1)	
JAN	BDL	BDL	.	BDL	.	BDL
FEB	BDL	BDL	.	BDL	.	BDL
MAR	BDL	BDL	.	.	.	BDL
APR	BDL	BDL	.	BDL	.	.
MAY	BDL	BDL	.	BDL	.	BDL
JUN	BDL	BDL	.	BDL	.	BDL
JUL	BDL	BDL	.	BDL	.	BDL
AUG	BDL	BDL	.	BDL	.	.
SEP	BDL	BDL	.	BDL	.	IU
OCT	BDL	BDL	.	BDL	.	BDL
NOV	BDL	BDL	.	BDL	.	BDL
DEC	BDL	BDL	.	.100 <T	.	BDL
TOTL TRIHALOMETHANES (UG/L)			DET'N LIMIT = .500		GUIDELINE = 350 (A1)	
JAN	BDL	17.450	.	18.000	.	17.500
FEB	BDL	16.500	.	16.600	.	17.300
MAR	BDL	13.750	.	.	.	13.950
APR	BDL	18.300	.	19.300	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM METRO TORONTO (EASTERLY WTP) 1989

WATER TREATMENT PLANT

DISTRIBUTION SYSTEM

RAW

TREATED

SITE 1

SITE 2

STANDING

FREE FLOW

STANDING

FREE FLOW

MAY	BDL	17.800	.	19.300	.	20.200
JUN	BDL	14.700	.	16.700	.	15.600
JUL	BDL	15.450	.	15.450	.	15.000
AUG	5.800	23.150	.	25.250	.	.
SEP	BDL	22.600	.	23.500	.	!U
OCT	BDL	18.650	.	19.350	.	20.000
NOV	BDL	15.200	.	15.050	.	15.800
DEC	BDL	17.150	.	17.050	.	16.500

TRACE LEVELS OF TOLUENE ARE LABORATORY ARTIFACTS DERIVED FROM THE ANALYTICAL METHODOLOGY.

TRACE LEVELS OF STYRENE ARE CONSIDERED TO BE LABORATORY ARTIFACTS RESULTING FROM THE LABORATORY SHIPPING CONTAINERS.

Table 6

<u>SCAN/PARAMETER</u>	<u>UNIT</u>	<u>DETECTION</u>		<u>LIMIT</u>	<u>GUIDELINE</u>
BACTERIOLOGICAL					
FECAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	0	(A1)	
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML	(A1)	
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL	(A1)	
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A		
CHLOROAROMATICS					
HEXACHLOROBUTADIENE	NG/L	1.000	450.	(D4)	
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000	(I)	
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000	(I)	
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000	(I)	
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000	(I)	
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000	(D4)	
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000	(D4)	
HEXACHLOROBENZENE	NG/L	1.0	10.	(C1)	
HEXACHLOROETHANE	NG/L	1.000	1900.	(D4)	
OCTACHLOROSTYRENE	NG/L	1.000	N/A		
PENTACHLOROBENZENE	NG/L	1.000	74000	(D4)	
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A		
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A		
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A		
CHLOROPHENOLS					
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A		
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A		
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A		
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000	(D4)	
2,4,6-TRICHLOROPHENOL	NG/L	50.	2000.	(B4)	
PENTACHLOROPHENOL	NG/L	50.	30000.	(B4)	
CHEMISTRY (FLD)					
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A		
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A		
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A		
FIELD PH	DMSNLESS	N/A	6.5-8.5	(A4)	
FIELD TEMPERATURE	°C	N/A	<15 °C	(A1)	
FIELD TURBIDITY	FTU	N/A	1.0	(A1)	
CHEMISTRY (LAB)					
ALKALINITY	MG/L	.200	30-500	(A4)	
CALCIUM	MG/L	.100	100.	(F2)	
CYANIDE	MG/L	.001	.20	(A1)	
CHLORIDE	MG/L	.200	250.	(A3)	
COLOUR	TCU	.5	5.0	(A3)	
CONDUCTIVITY	UMHO/CM	1.	400.	(F2)	
FLUORIDE	MG/L	.01	2.4	(A1)	
HARDNESS	MG/L	.50	80-100	(A4)	
MAGNESIUM	MG/L	.05	30.	(F2)	

<u>SCAN/PARAMETER</u>	<u>UNIT</u>	<u>DETECTION</u>	
		<u>LIMIT</u>	<u>GUIDELINE</u>
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DMSNLESS	N/A	6.5-8.5 (A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40 (F2)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)

METALS

ALUMINUM	UG/L	.050	100. (A4)
ANTIMONY	UG/L	.050	10. (F3)
ARSENIC	UG/L	.050	50. (A1)
BARIUM	UG/L	.020	1000. (A1)
BORON	UG/L	.200	5000. (A1)
BERYLLIUM	UG/L	.010	0.20 (H)
CADMIUM	UG/L	.050	5.0 (A1)
COBALT	UG/L	.020	1000. (H)
CHROMIUM	UG/L	.100	50. (A1)
COPPER	UG/L	.100	1000. (A3)
IRON	UG/L	5.0	300. (A3)
MERCURY	UG/L	.01	1.0 (A1)
MANGANESE	UG/L	.050	50. (A3)
MOLYBDENUM	UG/L	.020	500. (H)
NICKEL	UG/L	.100	50. (F3)
LEAD	UG/L	.020	50. (A1)
SELENIUM	UG/L	.200	10. (A1)
SILVER	UG/L	.020	50. (A1)
STRONTIUM	UG/L	.100	2000. (H)
THALLIUM	UG/L	.010	13. (D4)
TITANIUM	UG/L	.100	N/A
URANIUM	UG/L	.020	20. (A2)
VANADIUM	UG/L	.020	100. (H)
ZINC	UG/L	.020	5000. (A3)

PHENOLICS

PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0 (A3)
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PESTICIDES & PCB

ALDRIN	NG/L	1.0	700. (A1)
AMETRINE	NG/L	50.	300000. (D3)
ATRAZINE	NG/L	50.	60000. (B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700. (G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300. (G)
GAMMA HEXACHLOROCYCLOHEXANE (LINDANE)	NG/L	1.0	4000. (A1)
ALPHA CHLORDANE	NG/L	2.0	7000. (A1)
GAMMA CHLORDANE	NG/L	2.0	7000. (A1)
BLADIX	NG/L	100.	10000. (B3)
DIELDRIN	NG/L	2.0	700. (A1)
METHOXYCHLOR	NG/L	5.0	900000. (B1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000. (D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000. (D4)
ENDRIN	NG/L	4.0	200. (A1)
ENDOSULFAN SULPHATE (THIODAN SULPHATE)	NG/L	4.0	N/A
HEPTACHLOR EPOXIDE	NG/L	1.0	3000. (A1)

<u>SCAN/PARAMETER</u>	<u>DETECTION</u>		
	<u>UNIT</u>	<u>LIMIT</u>	<u>GUIDELINE</u>
HEPTACHLOR	NG/L	1.0	3000. (A1)
METOLACHLOR	NG/L	500.	50000. (B3)
MIREX	NG/L	5.0	N/A
OXYCHLORDANE	NG/L	2.0	N/A
O,P-DDT	NG/L	5.0	30000. (A1)
PCB	NG/L	20.0	3000. (A2)
O,P-DDD	NG/L	5.0	N/A
PPDDE	NG/L	1.0	30000. (A1)
PPDDT	NG/L	5.0	30000. (A1)
ATRATONE	NG/L	50.	N/A
ALACHLOR	NG/L	500.	35000. (D2)
PROMETONE	NG/L	50.	52500. (D3)
PROPAZINE	NG/L	50.	16000. (D2)
PROMETRYNE	NG/L	50.	1000. (B3)
SENCOR (METRIBUZIN)	NG/L	100.	80000. (B2)
SIMAZINE	NG/L	50.	10000. (B3)

POLYAROMATIC HYDROCARBONS

PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A	
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A	
BENZO(B)CHRYSENE	NG/L	2.0	N/A	
CORONENE	NG/L	10.0	N/A	

SPECIFIC PESTICIDES

TOXAPHENE	NG/L	N/A	5000.	(A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	200000.	(B4)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000.	(A1)
2,4-DICHLOROPHENOXYBUTYRIC ACID	NG/L	200.	18000.	(B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A	
DICAMBA	NG/L	100.	120000.	(B1)
PICLORAM	NG/L	100.	190000.	(B3)
SILVEX (2,4,5-TP)	NG/L	50.	10000.	(A1)
DIAZINON	NG/L	20.	20000.	(B1)
DICHLOROVOS	NG/L	20.	N/A	
DURSBAN	NG/L	20.	N/A	
ETHION	NG/L	20.	35000.	(G)
GUTHION(AZINPHOSMETHYL)	NG/L	N/A	20000.	(B1)
MALATHION	NG/L	20.	190000.	(B1)
MEVINPHOS	NG/L	20.	N/A	
METHYL PARATHION	NG/L	50.	7000.	(A1)
METHYLTRITHION	NG/L	20.	N/A	
PARATHION	NG/L	20.	50000.	(B1)

<u>SCAN/PARAMETER</u>	<u>DETECTION</u>		
	<u>UNIT</u>	<u>LIMIT</u>	<u>GUIDELINE</u>
PHORATE (THIMET)	NG/L	20.	2000. (B3)
RELDAN	NG/L	20.	N/A
RONNEL	NG/L	20.	N/A
AMINOCARB	NG/L	N/A	N/A
BENONYL	NG/L	N/A	N/A
BUX (METALKAMATE)	NG/L	2000.	N/A
CARBOFURAN	NG/L	2000.	90000. (B1)
CICP (CHLORPROPHAM)	NG/L	2000.	350000. (G)
DIALATE	NG/L	2000.	30000. (H)
EPTAM	NG/L	2000.	N/A
IPC	NG/L	2000.	N/A
PROPOXUR (BAYGON)	NG/L	2000.	90000. (G)
SEVIN (CARBARYL)	NG/L	200.	90000. (B1)
SUTAN (BUTYLATE)	NG/L	2000.	245000. (D3)

VOLATILES

BENZENE	UG/L	.050	5.0 (B1)
TOLUENE	UG/L	.050	24.0 (B4)
ETHYLBENZENE	UG/L	.050	2.4 (B4)
PARA-XYLENE	UG/L	.100	300. (B4)
META-XYLENE	UG/L	.100	300. (B4)
ORTHO-XYLENE	UG/L	.050	300. (B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0 (D1)
ETHYLENE DIBROMIDE	UG/L	.05	.05 G)
METHYLENE CHLORIDE	UG/L	.500	50. (B1)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	70. (D5)
1,1-DICHLOROETHANE	UG/L	.100	N/A
CHLOROFORM	UG/L	.100	350. (A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200. (D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0 (D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0 (B1)
1,2-DICHLOROPROPANE	UG/L	.050	6.0 (D5)
TRICHLOROETHYLENE	UG/L	.100	50. (B1)
DICHLOROBROMOMETHANE	UG/L	.050	350. (A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60 (D4)
CHLORODIBROMOMETHANE	UG/L	.100	350. (A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0 (C2)
BROMOFORM	UG/L	.200	350. (A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17 (D4)
CHLOROBENZENE	UG/L	.100	60. (D5)
1,4-DICHLOROBENZENE	UG/L	.100	1.0 (B4)
1,3-DICHLOROBENZENE	UG/L	.100	130. (G)
1,2-DICHLOROBENZENE	UG/L	.050	3.0 (B4)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A
TOTAL TRIHALOMETHANES	UG/L	.500	350. (A1)
STYRENE	UG/L	.05	140. (D5)

